

The University of Chicago

MOBILE: INDUSTRIAL SEAPORT
AND TRADE CENTER

A DISSERTATION SUBMITTED TO THE FACULTY
OF THE DIVISION OF THE PHYSICAL SCIENCES
IN CANDIDACY FOR THE DEGREE OF DOCTOR
OF PHILOSOPHY

DEPARTMENT OF GEOGRAPHY

1942

By

EDWARD L. ULLMAN

CHICAGO, ILLINOIS

1943

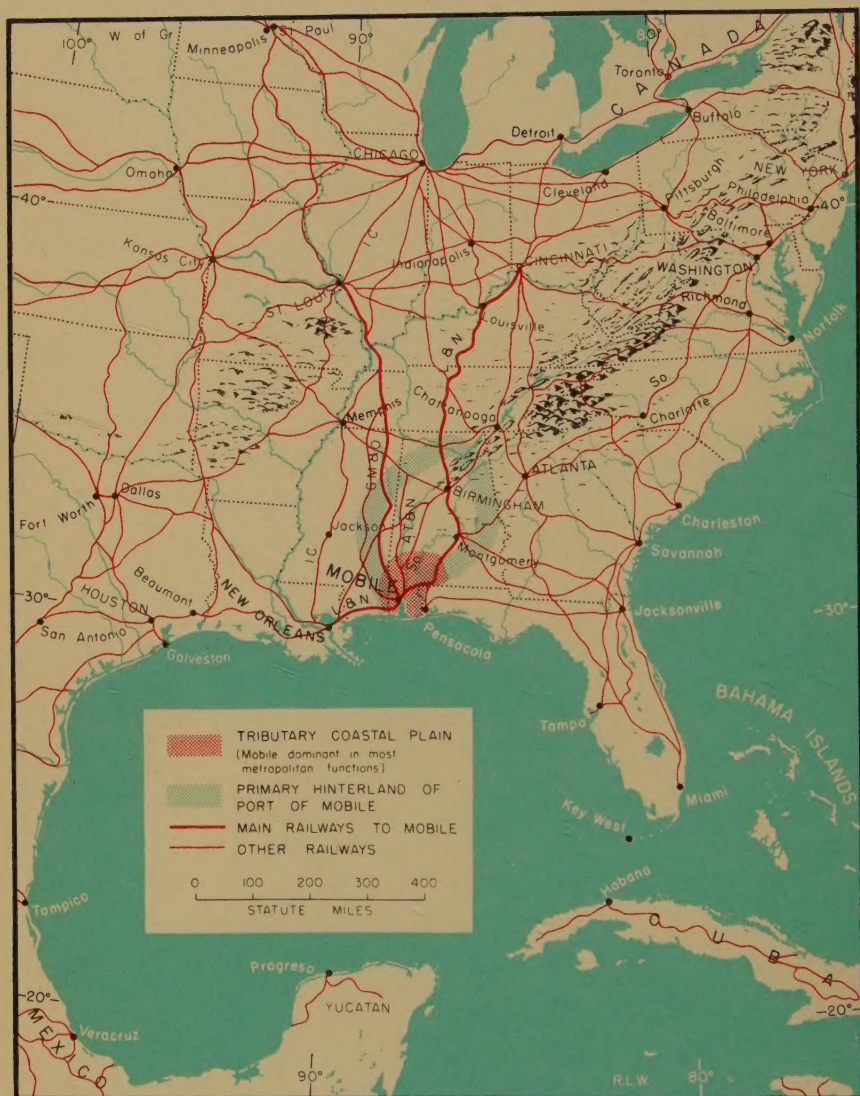


Fig. I- LOCATION OF MOBILE AND ITS TRIBUTARY AREAS

See Chapter IV for a description of tributary regions and Table 7, Chapter VI for figures on volume of trade between these regions and Mobile.

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FOREWORD

The picture presented in this study, based on five months field work in 1940 and subsequent library research, is Mobile at the beginning of 1940, after the city had entered into its industrial expansion of the 1930's but before wartime activities had left their distinctive stamp. In the two years following 1940 the civil population of Mobile County increased 36.9 per cent, from 141,000 to 193,000, the largest percentage increase of any county or urban area in the United States. In the same period wholesale and retail trade more than doubled, the number of daily telephone calls tripled and employment in industry and transportation increased more than three-fold. The details of this wartime expansion belong to another story but the stage for the expansion is set in the pages that follow.

A major objective of the study is to provide basic material for planning by business and government. Such planning should take account of pre-war trends in the city as well as of war changes, since the problems of post-war adjustment will demand knowledge of pre-war prospects. Planning is needed in Mobile to enable the city, (1) to reap full and permanent benefit from its commercial and industrial expansion of the 1930's and, (2) to facilitate war planning and adjustment to post-war conditions.

I am grateful to the kind and hospitable residents of Mobile who furnished information and helped me in many ways. The names of individual contributors are found in the text that follows. So many lent assistance, however, that it is impossible to name them all; I take this opportunity, therefore, to thank them all individually and collectively.

The following persons read the text and made helpful suggestions: Arch Winter, Mobile consultant, National Resources Planning Board, Chauncy Harris, University of Nebraska, and for Chapter VI only: R. G. Cobb, R. A. Alvarez and S. A. LeBlanc, transportation authorities in Mobile. Jay Seeley, David Campbell, Roger Prior and other students and faculty members at the University of Chicago aided in many ways. Excellent assistance in

drafting was furnished by Robert Williams and others. Without the help of all these contributors the study could not have been done. The author alone, however, assumes responsibility for the contents.

Professor Charles C. Colby of the University of Chicago deserves special thanks for assistance in organizing the study, critically reading the manuscript and aiding in many other ways. Finally I wish to thank my parents, Mr. and Mrs. B. L. Ullman, for assistance and encouragement at all times in the preparation of the study.

Washington, April 1943

Edward L. Ullman

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CHAPTER I

THE CITY AND THE PROBLEM

Character of the City

Mobile is a city of over 100,000 in southernmost Alabama at the head of Mobile Bay, 30 miles north of the Gulf of Mexico and about 140 miles east of New Orleans. It is a port, a trade center, and an industrial city. No one phrase can characterize the city. It is old and new; rich and poor; early nineteenth century mansions rub elbows with modern gas stations; lovely homes, modest cottages, and shacks house the town's population. It is primarily southern in culture but has something of the foreign atmosphere common to most ports. Like New Orleans it is reminiscent of the French colonial beginnings of the Gulf Coast, but the French influence is much less marked. In ante bellum days Mobile was an important port. For years after the war Mobile grew little and, save for occasional mild spurts of activity, lay dormant, much the same as Charleston and Savannah. In the last six or seven years, however, Mobile has attracted much attention as a growing industrial and port center. This new development of Mobile makes study of the city and analysis of its prospects particularly timely.

One enters Mobile from the west on the Old Spanish Trail, now U. S. Route 90, the main Gulf coastal highway. The road leaves the evergreen pine forests of the rolling coastal plain and enters a ribbon development of tourist camps and gas stations on the outskirts of the city, the only extensive area of such type around Mobile.¹ The highway comes into the city proper on Government Street, Mobile's main artery, a wide, tree-lined avenue flanked by fine residences. One is impressed by the size and grandeur of the trees, especially the live oaks and water oaks, with their huge spreading limbs, hung with Spanish moss. The

¹For a small scale general map of Mobile see Fig. 4; for detailed land use maps on large scales see Figs. 11 and 12 in pocket at end of volume.

greenness of the vegetation is striking, especially if one has come from the North in winter. The dark green leaves of the oaks, the glazed green leaves of magnolia, privet, and other shrubs and trees catch the eye of the visitor. One realizes that the huge trees are important to Mobile--sidewalks and curbs are interrupted to allow for their growth. On side streets it is not uncommon to find huge trees blocking half the roadway or even growing in the middle of the road forcing traffic to detour around them. Signs on some residential streets off Government Street even prohibit vehicles over eight feet high from entering because of overhanging limbs. In the spring, February and March, flowers bloom in a large part of the city. Their colors make a lovely contrast against the evergreen background. Pink and red azaleas are most numerous and are the pride of the city. In many places, purple wisteria, twined around telephone poles, make even these prosaic urban necessities beautiful. The attention given to flowers, as evidenced by the development of the Azalea Trail, a flower lined route through the city, is probably Mobile's finest civic achievement.

The abundance of vegetation, and its greenness in winter testifies to the very moist, nearly subtropical climate of Mobile. The winters are mild; the average January temperature is 52 degrees Fahrenheit; the average July temperature is 82°. ¹ An average annual rainfall of 62.1 inches gives Mobile the dubious distinction of being the rainiest large city in the United States. ² Only small sections of the northern Pacific Coast and the Southern Appalachians have more rain than the Alabama-Mississippi Gulf Coast. The large rainfall and relatively warm temperature indicate the high humidity of Mobile, which is probably the most unpleasant feature of an otherwise comfortable climate. Nights are usually cool and the prevailing southeasterly winds off the Gulf keep summer temperatures from rising to excessive heights.

¹The average January minimum is 43°, the average July maximum is 90°. Absolute minimum from 1871 to 1930 was -1; absolute maximum: 103; total number days with a minimum temperature under 32: 11; over 90: 43 (R. J. Martin [ed.], Climatic Summary of the United States [U. S. Weather Bureau, Washington, D. C., 1936], sec. 101, East, Central, and Southern Alabama).

²Miami, with 50.7 inches and New Orleans with 57.4 inches are the nearest competitors among cities of more than 50,000 population (ibid., sec. 105 and sec. 62).

As one continues down Government Street the white frame mansions of Victorian and later periods give way, near the center of town, to older brick houses trimmed with iron lace characteristic of the French colonial influence strong in Mobile in the early nineteenth century. The street ends at Mobile River after passing through the edge of the downtown district, marked by a mixture of gas stations, old mansions, semi-public buildings and, near the river, secondhand stores and wholesale establishments, mostly old, ramshackle, two-story structures. At the river bank is a vantage point from which some of the wharves north and south along the river can be seen, as well as the shipbuilding ways on Pinto Island downstream across the river (Figs. 4 and 12). On the south side of the street is the Louisville and Nashville Railroad station, Mobile's main passenger depot. Along the river bank one or two white banana boats can usually be seen unloading bananas into belt conveyors for transfer to strings of orange colored refrigerator cars. Upstream to the north is the main section of the port, culminating in the huge new concrete and steel Alabama State Docks, the major ocean terminal of the city (Figs. 4 and 11). Ships from all over the world pass near the shore, up and down the river--oil tankers from Texas, bulk carriers transporting bauxite from Dutch Guiana and, until recently, manganese ore from Russia, outbound steamers loaded with lumber and other commodities, and many small craft, principally barges and towboats from Birminghamport on the Warrior River. Mobile's basic activity, transportation, can be seen and appreciated from this view of moving ships.

Northwest about four blocks from the foot of Government Street is the center of the commercial core. This center is Bienville Square, a beautiful, block-square park in which huge, shady oaks grow. On the east, or river side of the square are the main banks and office buildings of Mobile, the tallest structures in the city, ranging from 8 to 20 stories in height. This section of low skyscrapers is smaller than in most American cities of similar size. Along the south side of the square is Dauphin Street, Mobile's main retail shopping street, a narrow, one-way route, lined with many small and some large stores. Dauphin Street, in common with some other business streets, is bordered by galleries built over the sidewalks in front of the stores. These galleries provide shade from the hot sun and even more wel-

come shelter from the frequent rains. Many old galleries still remain but they are not as numerous as they once were. At one time they completely surrounded Bienville Square. Modern progress, with its streamlining, is doing away with this admirable adaptation to climate. Nevertheless the narrow gallery-lined business streets, with their small storefronts, differ from most American streets and appear so foreign that one world traveler driving down Dauphin Street for the first time was heard to wonder why all the signs were in English.

The northern part of the Mobile urban area, including the dispersed industrial suburbs of Pritchard, Toulminville, Plateau, Magazine, and Chickasaw, differs from most of the city (Fig. 11). It is a fringe area with new buildings amidst large blocks of vacant land, poorly planned, with a haphazard arrangement of streets and utilities. It differs from most fringe districts in that it is an industrial, low-grade residential area rather than primarily a residential fringe as found in the outskirts of most cities. Sawmills, the most common industrial structures in Mobile, are numerous. Here also are two large new paper mills and other large factories. When the wind blows from the north, as it does frequently, the nauseating smoke of the paper mills is blown over the city and reminds Mobilians of one unpleasant aspect of their city's recent industrial progress.

The total urban area covers about 27 square miles, approximately half inside the city limits, half outside. The land is flat and low lying with the exception of that in Springhill, a suburb at the extreme western edge of the built-up area. This residential suburb is laid out on a hill 200 feet high, the nearest high land to the city. Elsewhere significant breaks in the natural landscape are caused only by swampy land such as that along Three Mile Creek which divides the city from its northern suburban fringe.

Population of the metropolitan area (city and contiguous suburbs) was 114,906 in 1940, an increase of 24 per cent over the 93,123 reported in 1930. This increase was well above the average reported for cities in the country during this decade and reflects the recent industrial expansion of the city. Population within the city limits was 78,324. Mere listing of the population of the incorporated city, however, gives a false impression since much of the built-up area, part of Mobile in all save political

status, is outside the city boundaries. During this decade the city itself grew only 15 per cent, whereas the peripheral communities increased their population by 33 per cent, a large increase characteristic of suburban districts in most parts of the country.

In 1930 Negroes accounted for 36 per cent of the population, foreign born, 2.9 per cent.¹ The Negro percentage is higher for Mobile than for the urban population of the East South central section (29 per cent),² but it is not as high as in such cities of the Deep South, as Montgomery (45 per cent), and Selma, Alabama (51 per cent).

Mobile like most southern cities ranks low in per capita amount of police and fire protection, salary of school teachers, and other public functions which can be taken as measures of the civic qualities of a city.³ Since the measurement applies primarily to governmental services it is a measure of the amount and quality of public service, rather than of the "general excellence" of a city; the latter almost defies quantitative measurement. The poor Negro population of Mobile accounts for part of the bad showing. In civic qualities Mobile is rated about the same as Pensacola, Shreveport, and Chattanooga; is slightly above Charleston, Savannah, Durham, and Montgomery; and below Jacksonville, Tampa, Nashville, and Birmingham.

No discussion of Mobile would approach completeness if the southern character of the culture was not emphasized. The combination of politeness, leisureliness, and emphasis on social rather than business affairs, conditions the economic life of the city just as surely as do climate, raw materials, or markets. The actions and attitudes of the people, although less visible in the landscape than such material responses to environment as sawmills, paper mills and naval stores, are just as truly indications of the character of the region. The sociable custom of taking time out to drink coca-colas, the care and friendliness shown a stranger in giving him directions, the total absence of

¹Fifteenth Census of the United States: 1930. Population, Vol. III (Washington: Government Printing Office, 1932), Part I, p. 109.

²Ibid., p. 29.

³E. L. Thorndike, Your City (New York: Harcourt Brace and Co., 1939), p. 34.

bookstores, the emphasis on home living as shown, for example, by the restricted development of restaurants, the nepotism characteristic of business, are all found elsewhere but are probably as characteristic of Mobile as of any other section of the South. Subtle and distinct variations of traits commonly regarded as southern exist in Mobile, such as the lack of a pronounced Southern accent, and some of the carry-overs from the long past French period, such as the Mardi Gras celebrations, and perhaps a new reform or efficiency movement as evidenced by the desire to secure new industries, and by the establishment of a local civil service commission.¹

The Problem and the Scope of the Investigation

The primary purpose of this study is to ascertain as accurately as possible why a city of the size and character of Mobile has developed at its present location and to discover and explain the relations between the city and surrounding and distant areas. Emphasis will be placed on relative location and external areal relations rather than on the site and internal pattern and morphology of the city. The localization of functions and the internal character of the city, however, will be discussed in order to secure a picture of the actual physical city whose basic support is to be explained. It is hoped, therefore, that a fairly complete picture of the geography of Mobile will result.

In most recent geographic work in America, the internal structure of a city, particularly the pattern of land-use, has received greatest attention. Bobeck points out that this approach also has characterized most of German urban geography since Schlüter led the way in 1899.² Bobeck insisted that such studies, valuable though they were, represented at best only half the field of urban geography, and that there remained unanswered the fundamental geographical question, "What are the reasons for the existence, present size, and character of a city?"

¹The remarkably pleasant society of Mobile has been noted by most of the visitors who have written about Mobile in the last hundred years. The agreeable politeness likewise impressed the present writer.

²Hans Bobeck, "Grundfragen der Stadtgeographie," Geographischer Anzeiger, XXVIII (1927), 213-24.

To answer this question the areal support of the city should be determined; fundamental to this determination is a study of circulation--the currents of traffic which feed the city.¹

In view of the high importance of transportation in the life of a modern city it is somewhat surprising that but few if any cities have been examined thoroughly in relation to transport services and traffic currents.² Part of the explanation for this neglect is the difficulty of securing adequate data. This difficulty confronts a study of Mobile. Nevertheless, it is possible to present a fairly complete traffic flow picture of Mobile's external areal relations. For water traffic a complete presentation is possible, involving density of movement, routes, direction of flow, and origin and destination of every major commodity handled. For land routes density and direction of freight on railroads, passenger car and truck density on highways and the amount of electrical energy and natural gas brought into the city can be presented cartographically, so that a measure of the actual relative importance of the routes connecting Mobile with surrounding areas is possible. Although exact origin and destination figures for land traffic cannot be secured, a close approximation can be made, and other more "static" measurements such as trade area

¹Both Dickinson and Crowe in their emphatic disagreement about the nature of geography do agree on one point: that some objective measure of economic circulation, a mapping of men and things moving in area, is fundamental in any study of a region and is particularly important in the study of cities. Crowe states: "In thus turning to consider transport as the effective regionalising principle, it must be emphasised that a dynamic view implies that stress is to be laid not upon terminal facilities, nor on the pattern of the system, but upon men and things moving," or "... situation [of cities] must be viewed not with regard to route but with regard to currents. From the new view, the town is no longer regarded as a pathological excrescence, but is studied in close relation to the country it serves." (P. R. Crowe, "On Progress in Geography," Scottish Geographical Magazine, LIV [1938], 14.) Dickinson, among other statements, says: "... the urban center in all these respects [its geography] is absolutely inseparable from the route pattern and its traffic movement." (R. E. Dickinson, "Landscape and Society," Scottish Geographical Magazine, LV [1939], 10.) Dickinson says that the landscape purists whom Crowe criticizes for their emphasis on static, visible phenomena, really are concerned with "men and things moving," although some published works ignore this dynamic aspect.

²For a notable exception see C. D. Harris, Salt Lake City, A Regional Capital (Private edition; Chicago: University of Chicago Libraries, 1940).

limits can be used. Trade areas for a variety of representative functions were therefore ascertained by interviews in Mobile and in the surrounding countryside. In the space available, however, all external relations of Mobile cannot be presented in detail, even if it were possible to secure complete information. These limitations necessitate a sample presentation of some factors, but through representative sampling and emphasis on the most important factors of location, it is believed that the basic areal support of the city can be established satisfactorily.

In addition to presenting Mobile as a case study in the areal support of cities, a relatively neglected subject, the city should be studied for itself, first because it is so little known, and, second, because it is entering upon an important period of new development characteristic of critical areas of the Deep South in the last decade. It is hard to imagine a city of comparable size in the United States for which fewer questions have been answered and for which there are poorer data. Statistics both public and private are meager; maps and books are practically non-existent. What material has been gathered on Mobile treats, as a rule, such romantic but not very significant topics as legends and personalities of the city or the spectacular battle of Mobile Bay. The result is that this study of Mobile by necessity is based largely on first-hand information gathered by mapping, interviewing, and other field methods.

CHAPTER II

EVOLUTION OF THE CITY

Mobile is an old city. The story of Mobile since its start, however, is not one of uniform growth or evolution along one line of development. In fact, three distinct periods can be recognized in Mobile's history. The first is the colonial period from 1702 to 1820. The second is the golden age of the Cotton Kingdom from 1820 to about 1870. The third period, from 1870 to the present witnesses the slow evolution of the modern city developing upon the foundations of the old cotton metropolis. In addition, some evidence points to the recognition of a fourth period starting in the third decade of the twentieth century when Mobile began to develop at a more rapid rate than in the preceding era. Although Mobile was not a large city during its long colonial period, the "early start" of the city as compared with nearby settlements conditioned Mobile's future to some extent and gave the city a small advantage over its nearest neighbors, just as the more substantial development of later periods provided an urban base for still later growth.

The Founding of Mobile and the Colonial Period: 1702-1820

The initial settlement of Mobile was made in 1702. Almost two centuries before, Spanish explorers had traversed the region but Mobile Bay remained for the intervening years merely a conjectural cartographic indentation on Spanish maps. In 1699 the Spaniards had established Pensacola, the first permanent northern gulf settlement, and a few years earlier La Salle and a French expedition had attempted to find the mouth of the Mississippi from the sea, but failed, although La Salle had floated down the Mississippi some years before. In 1699 Iberville sailed from France to the Gulf Coast with a mission to establish a capital for the Louisiana country, preferably at the mouth of the Mississippi, 130 miles west of Mobile Bay. He did establish a

fort several miles above the Mississippi mouth, but decided that the swift, tortuous waters of the large river would not be conducive to sail navigation nor would the marshy banks provide a good site for habitation.¹

Iberville decided that a site for France's colonial enterprise would have to be secured farther east along the Gulf shore. West of the Mississippi mouth for 300 miles the shoreline was too marshy for settlement. Iberville recommended acquisition of Pensacola, the best harbor on the coast, but the Spanish Junta naturally refused to cede the port, even though Spain and France were allies at the time. Biloxi, midway between the Mississippi and Mobile Bay had a fair harbor in the lee of Ship Island about 12 miles from the coast, and was established temporarily as the first capital, although the Biloxi area produced little food and had poor connections with the interior. The water supply was also poor, and was considered by the French to be the cause of much sickness.² After two years, therefore, the French decided to move and in 1702 established their capital at the head of Mobile Bay, some 75 miles east of Biloxi. The reasons were:³

1. A deep, fairly well protected harbor was available off Dauphine Island,⁴ at the mouth of Mobile Bay. This had been discovered by the French when sounding the coast, and appeared to be the best harbor at that time outside Pensacola. Dauphine Island was to be used for ocean ships and the goods transferred to Mobile in shallow draft boats, since only 6-10 feet of water existed in Mobile Bay. (Fig. 3.)

2. A protected river site was needed in order to maintain contact with the Indians and the back country by canoe, the

¹Peter J. Hamilton, Colonial Mobile (New York: Houghton Mifflin Co., 1910), p. 45.

²According to Penicaut, a carpenter with the expedition who kept a diary which is the main source for the life of the colony from 1698 to 1723 (reproduced in Pierre Margry, Découvertes et établissements des Français dans l'ouest et dans le sud de l'Amérique septentrionale [1614-1754], mémoires et documents originaux, Vol. V, Première formation d'une chaîne de postes entre le fleuve Saint-Laurent et le golfe du Mexique [Paris: Maisonneuve frères et ch. Leclerc, 1887], p. 423).

³Hamilton, op. cit., p. 51, describes most of these reasons in detail. Penicaut in Margry, op. cit., pp. 373-386, does not explain the move thoroughly.

⁴Dauphine Island is now spelled Dauphin; the latter spelling is used in later chapters, although Hamilton claims that Dauphine is correct.

only practical means of internal communication. A bay harbor such as Dauphine Island would be too rough for canoes.¹

3. The countryside at the head of the bay was considered fertile. Indians lived along the river north of the bay, near the present Mt. Vernon. This meant that the food supply could be augmented from local sources, an important consideration for an isolated frontier settlement.

4. The Mobilian Indians who lived in the vicinity were friendly and anxious to trade; their dialect was the inter-tribal trade jargon of the entire region.

5. Excellent stands of timber were available at water's edge. The French were interested in forest supplies for their navy just as the British were in New England. Masts and spars were obtained later.

6. Mobile Bay was accessible to the mouth of the Mississippi. Although the bay was not so well situated as the Mississippi mouth, small boats could proceed from Mobile to the Mississippi behind sheltering offshore islands.

7. The Mobile Bay area guarded the exposed frontier. The French had no rivals on the West, but they needed to watch the English on the Atlantic coast and the Spanish at Pensacola.² Mobile was the nearest safe point to Pensacola. In the early days, however, French and Spanish were friendly, although they realized they were destined to be rivals. The French often secured supplies from Pensacola and found it advantageous to start a new settlement near friendly Europeans. Nearness to Pensacola was an economic asset at the very beginning but was not a long range reason for establishing the capital at Mobile. Mobile was especially valuable because it was at the mouth of a river system which, through the Alabama and Coosa, provided a route to the frontier of English settlement advancing from the Carolinas. Specifically Mobile provided the best locality from which to influence and secure the trade of the strong Choctaw, Chickasaw, and Alibamon Indians who lived upstream from Mobile.

The last reason, all other considerations being reasonably well taken care of, seemed to be the deciding factor in choosing Mobile as the location for the new capital. Mobile, therefore, was an example of characteristic location of a capital near the exposed frontier of a political unit, in line with Vaughan Cornish's theory which he developed for Berlin, Peking, and other great capitals.³ No place in a new, undeveloped territory could be considered as a "storehouse" as Cornish terms a fertile, productive

¹Peter J. Hamilton, The Founding of Mobile (Mobile: Commercial Printing Co., 1911), p. 35.

²Justin Winsor, The Mississippi Basin. The Struggle in America between England and France, 1697-1763 (Boston and New York: Houghton Mifflin Co., 1895), pp. 48 and 62.

³Vaughan Cornish, The Great Capitals (London: Methuen and Co., Ltd., 1923).

kernel of a region. However, as has been shown, Mobile initially met this condition better than most other sites in Louisiana. Furthermore, since Mobile was the nearest to Europe of the coastal settlements in Louisiana, it served as a rather logical gateway to the territory since it was readily accessible to the two largest river systems of the new colony. Mobile, therefore, had the strong situational advantage initially of being both a gateway city¹ and an exposed frontier capital.

The 1702 settlement of Mobile was 27 miles north of the present city at the head of the bay, on what is known as 27 Mile Bluff on the west side of Mobile River (Fig. 3).² Why the settlement was not placed on the east side of the bay is not known. Spain claimed the whole Gulf Coast and particularly the land on the eastern side of Mobile Bay, which was close to Pensacola. Perhaps for this reason the French placed Mobile on the west side of the bay, where it would be safer from a land attack by the Spaniards. Also, the Indians, with whom the French were anxious to trade, were more numerous on the west side.

In 1702 the population was 130, including slaves and children. By 1704 the population had doubled, partly as a result of removing the sickly garrison from the Mississippi mouth to Mobile, and occupied eighty one-story thatch houses.³ Hamilton notes that the new town had a fort but no walks; he compares it to the Venetian factories established in barbarous lands. Dauphine Island, the seaport at the mouth of Mobile Bay, was unfortified, although Bienville urged its fortification. In 1710 it was sacked by English freebooters from Jamaica. Mobile's semi-interior location on shallow water saved it and presented another reason for

¹Cf. R. D. McKenzie, The Metropolitan Community (New York: McGraw-Hill Book Co., 1933), pp. 4 ff., for a discussion of gateway cities such as Omaha and the Twin Cities.

²Pickett and most early writers claimed that this first settlement was established at the mouth of Dog River, a few miles below the present city (A. J. Pickett, History of Alabama [first published 1851, new edition; Birmingham: Webb Book Co., 1900], p. 170). Hamilton, on the basis of better evidence conclusively shows that the first settlement was at 27 Mile Bluff, and that only a magasin, or supply house, was established at Dog River mouth (Hamilton, Colonial Mobile, p. 53). Careful reading of Penicaut (Margry, op. cit., p. 422), confirms Hamilton.

³Hamilton, Colonial Mobile, p. 68.

maintaining the capital up the bay, even though it was less accessible from the sea. For this reason Mobile never was attacked from the sea, although other cities in the Gulf and Caribbean, such as Pensacola and Cartagena, were despoiled.

The site of the settlement chosen by Bienville, the first governor, was a bluff in name only; the land was merely twenty feet above ordinary high water. In 1711 the town was badly flooded or rather, apparently, the low land back of the town site was flooded, cutting off communication with the interior and access to the gardens supplying foodstuffs.¹ Floods had also damaged the settlement in previous years. Therefore the habitants requested a change of site. Bienville selected land to the south where he had settled Choctaw Indians. He moved the Indians to Dog River and rebuilt the town on the present site of Mobile. The land back of the new site was higher and not so subject to flood as at the old site; houses nevertheless were built on piling.

The new settlement grew slowly and various attempts were made to develop resources around the town. In 1717 Law promoted his infamous Western Company which took over Louisiana and sent many colonists to Mobile. Law and Bienville wished to establish the company headquarters, or capital of Louisiana, at the mouth of the Mississippi. This new emphasis on large scale commercial development made a headquarters at the mouth of the Mississippi desirable, in contrast to the previous policy of maintaining a post merely for military observation and Indian control in the

¹For calling my attention to this interpretation I am indebted to Mr. John Glennon of Mobile. For confirmation note the area of muck land behind 27 Mile Bluff on the soil map of Mobile County in: Soil Survey of Mobile County, Alabama, U. S. Department of Agriculture, Series 1930, No. 42 (Washington: Government Printing Office, 1930). Hamilton (Colonial Mobile, p. 85) implies that the whole site was flooded. Penicaut, in Margry, op. cit., p. 481, makes only this puzzling statement: ". . . le fort de la Mobile et l'establissement des habitants des environs du fort furent inondés par le débordement de la rivière, de telle sorte qu'il n'y eut que les hautes élévations qui n'en furent pas endommagées." Hamilton, in The Founding of Mobile, p. 37, quotes D'Artaguiette, who had been sent to Mobile to investigate colonial affairs, as follows: "The waters rose so considerably this spring [1711] and with so much impetuosity that the greater part of the houses of this town (bourg) have been covered (noyées) up to the comb (fet) of the roof in five or six days. This lasted more than a month; the inhabitants have all asked to change down the river, which no one could refuse them."

lower south, for which Mobile was so well suited. It was also felt that since peace had been made with the Spaniards in 1720, it was not so necessary to maintain an eastern bulwark, such as Mobile, against Pensacola.¹ Furthermore, the harbor at Dauphine Island was silted up by a strong gale. Some opposed the move because they considered the low Mississippi delta unhealthy; as a compromise New Biloxi, nearer the Mississippi than Mobile, was established in 1720 as temporary headquarters, primarily because it now had a better harbor than Mobile. In 1722 headquarters were moved permanently to New Orleans, at a relatively high site chosen by Bienville in 1718 on the Mississippi, where the portage to Lake Pontchartrain, and the protected coastal route to the east, began.

The removal of the capital caused Mobile to decline. In 1735 Dumont, a French traveler, questioned the utility of the post.² All supplies were brought in from New Orleans. Only trees and a few vegetables seemed to support Mobile. In winter game was abundant, in summer the heat was excessive and the inhabitants lived on fish. However, Mobile was the nearest point on the coast to the large Indian populations and remained the seat of Indian congresses. It was also the base for trade with the Spanish in Florida.

In 1760 Mobile and Charleston were even rivals for the distant Indian trade of the section of the Southern Appalachians between the headwaters of the Alabama-Coosa rivers flowing to the Gulf and of the Savannah and other rivers flowing to the south Atlantic. Mobile's population, however, seldom exceeded 800 (Fig. 2).

Thus with the removal of the capital to New Orleans at the mouth of the largest river system, Mobile, at the mouth of the second largest river system emptying into the Gulf, became only the second city of the eastern Gulf, a subordinate role which she has had to play ever since. Her situation at the mouth of the second largest river system, however, contrived to support her and gave her some importance. At times from the eighteenth century to the present she did not even derive full benefit from

¹Winsor, op. cit., p. 152.

²Hamilton, Colonial Mobile, p. 132.

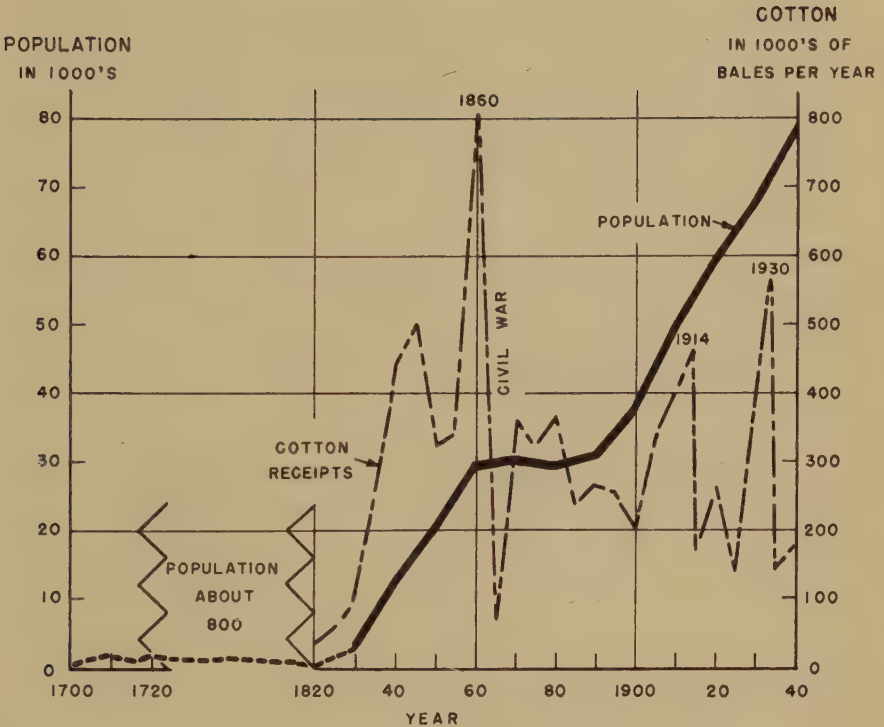


Fig. 2.--Population of Mobile, 1702-1940, and cotton receipts, 1820-1940.

Sources:

Population 1702-1820 - 1702 (130), Hamilton, Colonial Mobile, p. 63; 1712 (324), Bernard Reynolds, Sketches of Mobile (Mobile: B. H. Richardson, 1868), p. 6; 1745 (decrease in population--150 white men, 200 Negroes of both sexes, and a garrison), Hamilton, Colonial Mobile, p. 132; 1788 (1468), Hamilton, Colonial Mobile, p. 331; 1803 (810), *ibid.*, p. 359; 1813 (500), Reynolds, *loc. cit.*; 1818 (6000--almost certainly too high an estimate), M. A. Frazer, "Early History of Steamboats in Alabama," Alabama Polytechnic Institute Historical Studies, 3d Series (Auburn, Alabama, 1907), p. 3; also for 1818 (800--too low?), Hamilton, Colonial Mobile, p. 447.

Population 1830-1940 - Sixteenth Census of the United States: 1940. Population, First Series, Number of Inhabitants, Alabama (Washington: Government Printing Office, 1941), and earlier volumes of the census.

Cotton Receipts - Mr. Bowlin, Mobile Cotton Exchange.

her location. New Orleans, the regional capital, secured some of the Alabama-Tombigbee trade via the coastal route, just as Mobile initially secured the Mississippi trade. At times also in her colonial history, Mobile was slightly overshadowed by Pensacola, the seat of later Spanish and English colonial rules.

In 1763 the country east of the Mississippi was surrendered to the English, and Pensacola became the capital of West Florida, the political unit to which Mobile became attached. The town remained a military post with Indian trade and was the point from which the English competed with the French, on the Mississippi to the west, via the Tombigbee River basin. Mobile at this period was considered unhealthy by the British and troops were removed to drier Pensacola.

In 1779, Spain, then in control of Louisiana, seized Mobile; the city, however, continued its placid course. In 1803 the United States secured Louisiana with New Orleans but not Mobile, which again looked to Pensacola as the capital, although Pensacola at that time was only about half as large as Mobile.¹ Indian trade continued to be important and agriculture began to develop slightly.

During this period Spain owned only a strip of land along the coast; the back country was part of the United States and began to be settled by Americans moving by land from the North, from Tennessee, the Carolinas, and Virginia.

In 1813 the Americans occupied Mobile and the Mobile Bay region. With the filling in of the back country and American occupation, the colonial era came to an end and Mobile soon entered upon its greatest period of expansion, a growth which in a few years eclipsed all colonial development.

The Cotton Kingdom: 1820-1870

Mobile did not enter a new period of population growth for some years after American occupation (Fig. 2). In these years the back country slowly, then more rapidly, began to fill up with settlers and Mobile's growth reflected the growth of Alabama. The specific event which caused Mobile suddenly to grow was the advent of steamboats from 1818 to 1820. Prior to the steamboat all

¹Ibid., p. 354.

river travel was by keelboat and was almost entirely restricted to downstream travel. The boats were broken up in Mobile and some of the keels used as curbs on the streets of the town. The trip from Mobile to Montgomery took three months.¹ In addition to retarding shipment from the back country, keelboat navigation made particularly difficult the sending of supplies upstream; for this reason Mobile did not become an important supply city at the mouth of the river system. Hamilton states that it was cheaper and quicker to portage flour twelve miles from the headwaters of south Atlantic streams to the Coosa and then float it downstream to Montgomery, long though the trip was, than to carry it upstream from Mobile.² With the rapid development of the steamboat in the 20's and 30's, the trip from Mobile to Montgomery could be made in five to fourteen days, and Montgomery and Wetumpka, at the head of navigation on the Alabama, secured their supplies from Mobile. The upper country was cut loose from the East and established its own commercial port, Mobile. The Tombigbee basin likewise was tied to Mobile--in fact, had steamboats slightly before the Alabama.

By far the most important commodity moved and traded in was cotton.³ Mobile shipped the cotton grown in the Alabama-Tombigbee basin, which took in most of Alabama and a strip of eastern Mississippi. Cotton grown in the northern part of the state, however, was shipped down the Tennessee and eventually reached New Orleans. Cotton destined for Mobile was shipped by river steamer to the city, where it was unloaded, stored, pressed into high density bales, and transhipped to ships down the bay for export. This activity occupied Mobile for about six months after the cotton was picked. The rest of the year the city rested, amply paid by the rewards of the trade. Mobile became the second cotton shipping port of the United States, second only to New

¹M. A. Frazer, "Early History of Steamboats in Alabama," Alabama Polytechnic Institute Historical Studies (3d series; Auburn, Alabama, 1907), p. 3.

²Hamilton, Colonial Mobile, p. 470.

³C. S. Davis, The Cotton Kingdom in Alabama (Montgomery: Alabama State Department of Archives and History, 1939), p. 117. Davis states: "Cotton was the key to the whole economic system in ante-bellum Alabama."

Orleans in the ante-bellum period, a period when cotton was overwhelmingly America's chief export. Most of the cotton was shipped to Europe, especially England. In 1850, 23 per cent of the cotton used in England was shipped through Mobile. By 1860 New England took a quarter of Mobile's exports, Europe, mainly England, the rest.¹ The total receipts at Mobile are shown in Figure 2.

Cotton export meant more to Mobile than mere movement over the city's wharves. In addition to storage and high density pressing, important activities in themselves, Mobile was the seat of cotton factors--agents who sold the crop and provided the plantation owners with supplies.² The importation and distribution of supplies of all kinds including foods for the commercial plantations was the main support of Mobile. Mobile was no exception to the rule that cities generally derive more benefit from supplying their hinterlands with imports than from shipping out the exports of their tributary regions.³

As a result of the following natural and economic forces Mobile became the one large city of the Alabama-Tombigbee basin: (1) Mobile was the focus and break-bulk point of the only practical transport net of the region, the Alabama-Tombigbee river system. (2) The region was engaged in commercial agriculture and hence needed and supported a large commercial center. (3) The factor system, mentioned just above, required a large market, and a large market could be developed only where large supplies of cotton could be accumulated.⁴ Cotton, since it was non-perishable, lent itself well to concentration. Furthermore such a large volume of capital was required to operate the factor system, that only a few large seaboard centers could furnish enough capital.

¹Davis states that in 1821 44,000 bales were shipped from Mobile, 100,000 bales from New Orleans (*ibid.*, p. 136). From 1845 to 1849 Gulf ports shipped 1 1/2 million bales, Atlantic ports 1/2 million (*ibid.*, p. 139).

²*Ibid.*, pp. 141-67.

³*Cf. C. D. Harris, Salt Lake City, A Regional Capital* (Private edition; Chicago: University of Chicago Libraries, 1940), pp. 86-87.

⁴A. H. Stone, "The Influence of the Factorage System," in *The South in the Building of the Nation*, Vol. VI, *Economic History*, 1865-1910, ed. J. C. Ballagh (Richmond: Southern Historical Pub. Co., 1909), p. 349; also, "The Cotton Factorage System," *American Historical Review*, XX, 559.

This tended to freeze the business in the large cities.¹ Some planters attempted to deal directly with Liverpool, the ultimate market, but distances were so great that it was difficult.

The result of these forces was that Mobile was virtually the only town of any size in Alabama and contiguous areas, and since it was the metropolis for such a large, commercially producing area, it was a relatively large city, in a region with no other large centers. During the 1850's local merchants in the interior began to sell a small amount of incidentals but they furnished no serious competition to Mobile and New Orleans. Travelers commented on the lack of supplies available at the interior centers.² The situation in the South was much the same as in the plantation area of Brazil where only seacoast towns have developed and perform the urban functions.³

To the trade Mobile tapped via the rivers there was added in the 1850's the traffic of a new transport medium--the Mobile and Ohio Railroad. Before the Civil War this line was one of the most important railways in America, the only trunk line leading up from the Gulf and the only important railway in the Deep South. As its name implies, the railroad had as its larger objective the connection of Mobile with the interior of the country, just as New Orleans already was attached via the Mississippi. So desirous was Mobile for its construction that the citizens even taxed their real estate for \$300,000 to hasten construction.⁴ The railroad ran between the Tombigbee and Mississippi rivers and thus did not compete directly with river traffic. Its effect on Mobile was to enlarge the city's tributary area. Much cotton was shipped via the road from the western Black Belt and central Mississippi. For the three years prior to 1860, 100,000 bales were hauled annually,⁵

¹Stone, The South, VI, 348.

²Davis, op. cit., p. 160.

³See Pierre Deffontaines, "Rapports fonctionnels entre les agglomérations urbaines et rurales: Un exemple en pays de colonisation, le Brésil," Comptes rendus du congrès internationale de géographie Amsterdam, 1938, Sec. IIIa (Leiden: E. J. Brill, 1938), 139-44.

⁴Davis, op. cit., p. 130.

⁵Ibid., p. 132. Davis notes that in 1860 42 1/2 per cent of the road's revenue was derived from cotton.

about one-fifth of Mobile's exports. In the 70's about half of Mobile's cotton was hauled in by rail and of this the Mobile and Ohio hauled twice as much as the only other railroad, the recently completed Mobile and Montgomery line.¹

The Lumber Trade and the Evolution
of the Modern City

An examination of Mobile's population growth curve (Fig. 2) shows that the city's population declined in the decade from 1870-1880, the only decline in its history under the American flag. There was no actual loss of population, because the city, in a reorganization, drew in its limits and lost area. However, growth stopped. The decline did not take place immediately after the War between the States, although the interruption of commerce caused by the war did hurt Mobile. The cause was not primarily a political event, such as the Civil War, but rather the substitution of railways for waterways. This had a twofold effect on Mobile.

The first effect became noticeable even before many railways reached the Gulf. The penetration of railways from the east to headwaters of the rivers flowing to the Gulf, particularly to the head of navigation on the Alabama at Montgomery in the 1850's, caused the interior towns to develop and become commercial centers supplying areas which Mobile formerly served. At first this was not detrimental to Mobile because trade was developing in the entire region and there was enough to support several centers. However, when expansion stopped after the war and the railways continued to be extended, interior towns developed further as supply centers distributing goods received directly from the North, and Mobile lost trade. The freeing of slaves also tended to promote interior retail stores to take the place of plantation commissaries. These commissaries supplied the slaves before their emancipation with goods secured through Mobile factors. One writer, describing Mobile in 1874, comments: "The retail trade of the city has been greatly injured by the establishment of a vast number of new stores where the freedmen on adjacent planta-

¹Peter J. Hamilton, Mobile of the Five Flags (Mobile: The Gill Printing Co., 1913), p. 364.

tions purchase supplies which they once bought in bulk in Mobile."¹

A second reverse to Mobile resulting from construction of railroads occurred soon after the war upon completion of the line from Montgomery through Mobile to New Orleans and after construction of other railways to Gulf ports, particularly to New Orleans. As a result Mobile lost much trade.² It was considered that the city had become a way stop on the route to New Orleans and not a destination port.³

Mobile was thus in the awkward position of being caught between two advancing types of urban centers, on the one side the small interior cities, on the other the port metropolis of New Orleans.

Partly to remedy this condition Mobile inaugurated a series of harbor improvements, first at local and later at federal expense. There was little she could do to recapture trade moving north by land, but she did hope to provide harbor facilities to enable her to compete with New Orleans. The depth of water in Mobile Bay, as has already been noted, was so shallow that transshipment of cargoes via small boats to large vessels anchored at the foot of the bay, thirty miles away, was necessary. This was costly, time-consuming, and tended to damage goods.⁴ The depth

¹Edward King, The Great South (Hartford, Conn.: American Pub. Co., 1875), p. 325.

²Ulrich B. Phillips, "Early Railroads in Alabama," Gulf States Historical Magazine, I (1902-1903), 346.

³The following statement illustrates the feeling of a contemporary Mobilian: ". . . The establishment of the New Orleans, Mobile and Chattanooga Railroad will be ruinous and disastrous in its operations. It will crush out Mobile. The day it is completed, the death knoll of our beautiful city will be sounded, and Mobile will henceforth be a railway station for New Orleans, like Shubuta, or Corinth, or any other insignificant village on the line of the Mobile and Ohio Railroad. Do you not see, citizens of Mobile, that you are actually assisting New Orleans and Selma to crush your trade in the dust? What will be the process? Why the cotton which is the blood of your veins will all pass thru Mobile on its way to New Orleans. Not a bale of it will stop here." (Bernard Reynolds, Sketches of Mobile [Mobile: B. H. Richardson, 1868], p. 39.)

⁴One proposal to correct the situation was for construction of a railway from Mobile to a deep-water harbor to be dredged at Dauphine Island at the mouth of the bay. The story of this never realized project is told in chap. iii.

of water in the harbor channel from 1826 to 1852 was about 10 feet;¹ by 1865 the bar at Choctaw Pass at the mouth of Mobile River had shoaled to 7 feet.² Improvements then followed: from 1870 to 1876, 13 feet was provided; from 1881 to 1888, 17 feet; from 1888 to 1896, 23 feet;³ from 1910 to 1914, 27 feet;⁴ and by 1928 a 30 foot channel had been dredged.⁵

The harbor improvements, which brought Mobile abreast of other ports aided in checking the decline of the city. Cotton fluctuated but still remained important, although never reaching the highs of the ante-bellum period as Figure 2 shows. The main support, however, was the development of the lumber industry, which migrated from the cut-over forests of the east to the Lakes States and to the South. Complete figures for the lumber trade or any other commodities shipped through Mobile, with the exception of cotton, are not available for the nineteenth century. Fragmentary figures on foreign exports of lumber, however, show a steady increase.

Complete figures for Mobile's ocean trade are available for the first time in 1906 and show the change since cotton constituted practically the only shipment in the first half of the nineteenth century.⁶ The total tonnage handled in 1906, exclusive of river and local harbor traffic, was 1,691,000 tons,

¹Annual Report of the Chief of Engineers for 1896, Appendix P, "Improvement of Rivers and Harbors in Western Alabama and Eastern Mississippi and of Bogue Chitto, Louisiana" (Washington: Government Printing Office, 1896).

²Hamilton, Mobile of the Five Flags, p. 376; Appleton's Handbook of American Travel, The Southern States (New York: Appleton and Co., 1866), p. 93, states: "They [boats] cannot come directly up the bay to the city but pass up Spanish River six miles round a marshy island and down this a short distance to the city wharves."

³Annual Report Chief of Engineers, loc. cit.

⁴Hamilton, Mobile of the Five Flags, loc. cit.

⁵Corps of Engineers, U. S. Army, and Bureau of Operations U. S. Shipping Board, The Port of Mobile, Alabama, Port Series No. 3. Part I (Rev. 1929; Washington: Government Printing Office, 1930), p. 4.

⁶Mobile Chamber of Commerce and Maritime Exchange and Shippers Association, Statement of Water-borne Commerce of Port and Rivers (Mobile, 1909).

valued at \$40,784,000.¹ Of this cotton accounted for but 60,000 tons, about a thirtieth of the total tonnage, valued at \$8,710,000, about a fifth the total value. Forest products (including naval stores, but principally lumber and timber), on the other hand, accounted for about 617,000 tons, ten times the volume of cotton and over a third of the total trade of the port. In value, a lesser measure of importance to a port, forest products amounted only to about \$8,150,000, slightly less than the value of the cotton. The next most important item was coal (almost entirely bunker) which amounted to approximately 335,000 tons. Other important items were grain, over 100,000 tons, and bananas, 55,000 tons. There were also small quantities of other commodities. The significant conclusion to be drawn is the relative unimportance of cotton as compared to its one-time all important position in Mobile. The sawmill had become more important than the cotton press ever had been, but lumber never came to dominate the city's trade as completely as cotton once had.

The development of the lumber trade and general port business enabled Mobile to continue a steady growth. However, with the exception of occasional mild spurts, Mobile did not boom, or even grow as rapidly as most American cities. Mobile did not become an important industrial center, but did gradually acquire some industries other than sawmills. The chief development was in shipbuilding and ship repairing. During the first world war Mobile became an important shipbuilding center and after the war continued on a smaller scale as the leading ship repair center of the Gulf. Mobile also began to ship out iron and steel products from the rapidly developing Birmingham district; the improvement of the Warrior River since 1920, providing barge connection with Birmingham, has aided the trade. Today iron and steel products are one of the big three of Mobile's port traffic, along with lumber and petroleum products.

In the last ten years Mobile has begun to forge ahead at

¹River traffic terminating and originating at Mobile amounted to 902,805 tons valued at \$18,022,993. Additional local haulage in the harbor was 259,322 tons of lumber and timber valued at \$2,015,567. Foreign exports were 956,948 tons, value \$22,378,894; coastwise departing 162,406 tons, value \$7,590,473; foreign imports 114,392 tons, value \$3,534,338; coastwise arriving 139,319 tons, value \$6,266,401. Grand total all movements: 2,852,985 tons, value \$62,079,579. Source: Ibid.

a more rapid rate, primarily as a result of the establishment of the paper industry on a large scale and improvement of port facilities provided by the \$12,000,000 Alabama State Docks, which gave Mobile port facilities second to none. The defense boom of the last year has again caused shipbuilding to increase, as well as some other industries, particularly the manufacture of alumina. Even without the added stimulus of defense manufacturing, Mobile, for the first time since the golden age of the Cotton Kingdom, is on the threshold of a sound new expansion, this time based on manufacturing taking advantage of local raw materials and excellent transportation situation, rather than on wholesale and retail trade. The geographical story of this development will be told in subsequent chapters.

The critical periods in Mobile's growth and development have been the periods of political and transportation change. Thus Mobile's start as a city, after a century of colonial village existence, occurred about 1820, seven years after American occupation had opened up the Gulf country and coincident with the introduction of the steamboat. The decline of the cotton metropolis occurred after the Civil War upon completion of the framework of an interior rail net which took trade away from Mobile, the river port. The most recent development of Mobile again is associated with change in politics and transportation--the construction of the Alabama State Docks and the cumulative effect of federal harbor improvements--which again favor the city after the setback of the latter nineteenth century. Mobile's growth also is a reflection of the growth of the Deep South. As a seaport for this area Mobile shares in its growth, not inevitably, but only if political and transportation developments do not work against the city. If they work in its favor, as they do now, Mobile is enabled to reap full benefit from its environment and location.

CHAPTER III

THE SITE OF MOBILE

Site Features at Mobile and Vicinity

The site of Mobile is a low lying sandy plain rising imperceptibly up from the western shore of Mobile River and the delta at the head of Mobile Bay. For most purposes this is the best site for a city on the western side of the river and bay, since it comes closer to the ideal combination of land and water conditions than other sites north or south along the western shore. The site problem facing early settlers on the low coastal plain and shallow waters of the Gulf, was not to secure level land, since there was practically no rough land to be avoided, nor to locate on shallow water for easy crossing by fords and bridges, inasmuch as such favorable places were virtually non-existent in desirable localities, and especially because movement by water was so much easier and more important than passage by land. In some respects the desired topography was the reverse of that sought in interior localities or on rocky coasts, since high land and deep water were the most important two criteria of a good site on the low Gulf coastal plain--high land to avoid floods and deep water to float ships. Other minor site factors also played their role.

Limiting Site Factors Immediately North and South of the City

Immediately south of the city, along the bay shore, the land is high enough to be well drained and thus would have provided a fairly good site for a city. However, if the city had been located there its harbor would have had to be formed in the open bay (Figs. 3 and 4). Ordinarily the bay is not rough but occasionally it is, particularly when hurricanes hit the region. The hurricane in 1916, for example, was so severe that it destroyed much of Arlington Pier, built by the city out into the bay south of the river mouth. Furthermore the water along the bay shore is

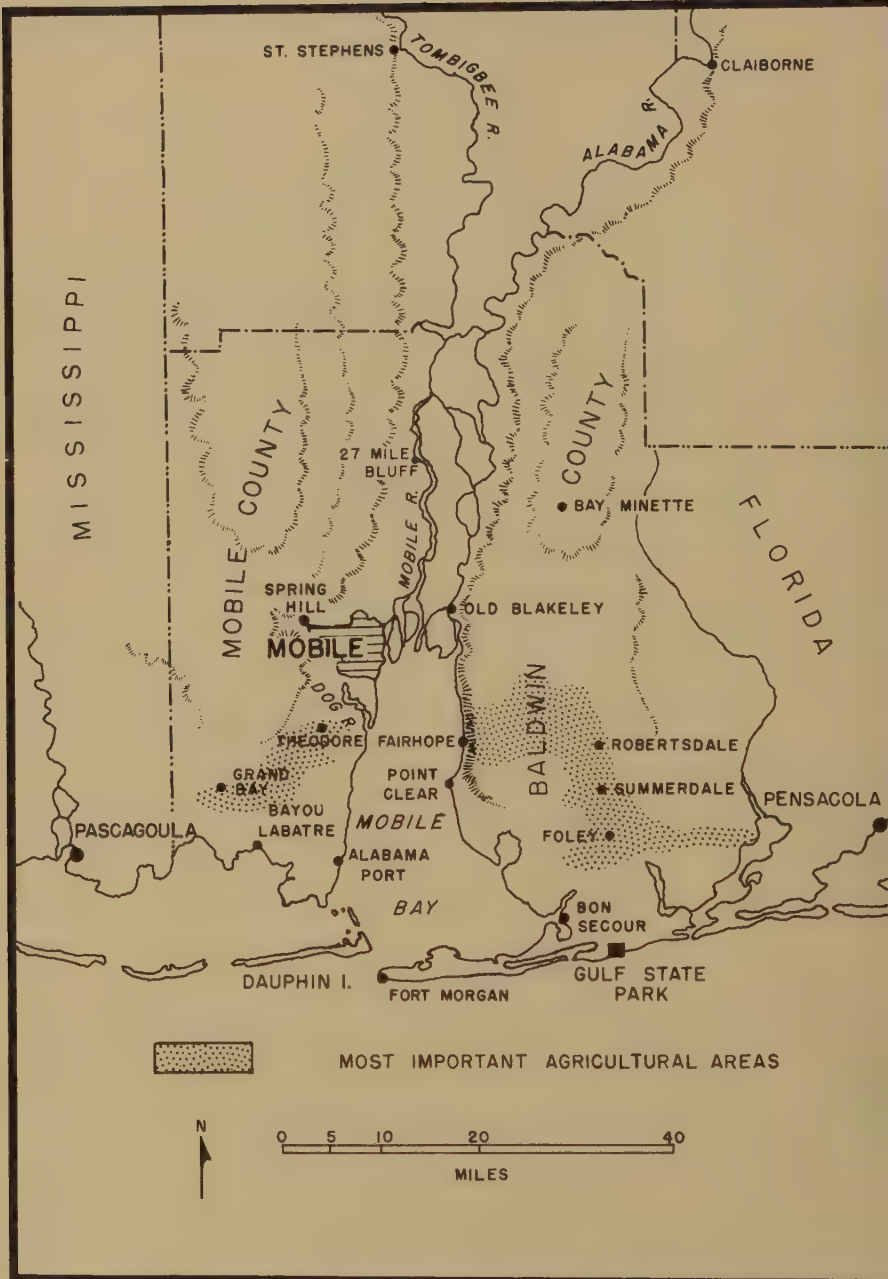


Fig. 3.--Mobile Bay and vicinity

so shallow (for the most part only two to five feet deep for almost a half mile off shore), that considerable dredging and pier construction would have been required for port facilities, more than has been needed for dredging a channel to the mouth of Mobile River and for filling in of land along the river for the present wharves. Even before any of the present channels were dredged it was more difficult to land on the bayshore than on the river bank where the slight river current within the confining banks maintained relatively deep water fairly close to shore. Another drawback to a site immediately south of the present city would be greater difficulty of access by land from the interior because of the barrier provided by Dog River, a tidal stream running parallel to the bay shore three or four miles inland. This would have been more of a handicap in early days before hard surfaced roads, bridges, and causeways became common.

North of the present city along the river most of the land is low lying and not attractive as an urban site. The abandonment of the initial settlement twenty-seven miles up river because of floods already has been discussed in Chapter II. Deep water however is close to the river banks; the rivers are about sixteen feet deep in contrast to an average of ten feet in the bay. In contrast to the south, character of the land rather than of the water appears to be the chief site handicap of the northern littoral. Moreover, since the channel to Mobile has been deepened to thirty-two feet, a location lower down on the river has meant less dredging in recent years than would have been required at an up stream site.

It might be argued that a location at the foot of the bay would have been still better than one at the mouth of the river because even less dredging would have been required. This possibility, as well as the case for a port on the eastern shore, will be discussed in the next major section. The disadvantage of sites north or south of Mobile should not be strongly emphasized, since the differences are not great today. Under the technology prevailing in the period of initial settlement, however, the differences were enough to influence the choice of site.

The Harbor

In a city which has developed as a port and secures its subsistence primarily from water traffic, the most important fea-

ture of its site is its harbor. The harbor of Mobile is provided by the lowest stretch of Mobile River, one of the main water courses of the Mobile delta. The Mobile River was not originally quite as deep where it entered the bay as Spanish River or Tensaw Rivers, the middle distributaries of the delta, but neither of these mid-delta channels were suitable for a port because of the marshy, alluvial land along their banks. The site of Mobile therefore represents the workable compromise on the western shore combining in best fashion fairly deep water contiguous to relatively dry land.

Mobile harbor combines many of the best features of a saltwater and a freshwater harbor. Because the river at Mobile is at tidewater, there is virtually no current and no fluctuation in level with volume of water in the stream. Both these disadvantages are present at New Orleans. Furthermore, the freshwater of the river kills marine borers (Teredo) and barnacles, thus reducing the cost of maintaining wharves and boats.¹ The complete protection afforded shipping by a stream less than one-quarter mile wide has already been noted. Another advantage is the small tidal range, normally only 1.1 feet in the bay, with an extreme of 3.8 feet.² Hurricanes have been known to raise the water level as much as 11.6 feet, to lower it 9.7 feet.³ The hurricanes, however, occur only at 10 to 15 year intervals and affect the port on the river very little, since the harbor is well protected.

The main disadvantage of the harbor is its shallowness. A channel 35 miles long has been dredged through the 10 foot deep bay to connect Mobile with the open sea. The dredging is not hard to maintain because most of the bottom is firm. Marine sediments rather than alluvial materials lie on the floor of most of the bay, since little silt is brought down by the slow flowing rivers. Although the channel is only 300 feet wide, it is nearly

¹In order to protect logs from saltwater at Gulfport, for example, a boom was built to create a small pond of fresh water in the harbor (Courtesy Mr. Roger A. Prior).

²Corps of Engineers, U. S. Army and U. S. Maritime Commission, The Port of Mobile, Alabama, Port Series No. 3. Part I (Washington: Government Printing Office, 1930), p. 1.

³U. S. Weather Bureau, Mobile, Alabama.

straight and not difficult to navigate, especially since it is in the fairly quiet waters of Mobile Bay. The channel across the outer bar below the mouth of the bay, however, is exposed to heavy seas and for this reason is 450 feet wide and 36 feet deep in contrast to the 300 foot width and 32 foot depth of the bay channel.

General Features and Local Variations in Terrain

The general site of Mobile is a low marine terrace along the river, rising from less than eight feet along the shore to over forty feet above sea level two or three miles inland.¹ The terrace, however, is covered fairly completely with sandy material washed down from the low ridge some ten or twelve miles west of the bay so that it is almost unrecognizable, except along Three Mile Creek in the northern part of the city and on the western edge of the Mobile River bottom lands north of Mobile (Fig. 4).² This terrace is the youngest of the Pleistocene terraces and is called the Pensacola Terrace after the type locality at Pensacola, Florida. It is the first terrace above the recent one being formed now by wave action along the Gulf coast from western Florida to eastern Texas.³ Local features are not very pronounced. There are, however, some minor variations in terrain at this tidewater site, which are critical.

Of first importance is the low land along the river. Originally the two block strip east of Water Street, bordering the river, was low water and swamp (Fig. 12). This area was filled in years ago but still remains below the ten foot contour

¹The terrace at Mobile formerly was considered to be the transition or merger between the popularly named "Second Bottom" along Mobile River and the second marine terrace of the coastal plain. (E. A. Smith, L. C. Johnson, and D.W. Langdon, Jr., Report on the Geology of the Coastal Plain of Alabama, Geological Survey of Alabama [Montgomery, 1894], p. 54.)

²The new contour maps issued in 1940 by the U. S. Geological Survey (Mobile and Chickasaw Quadrangles) show the terraces well. (Thanks are due to Dr. Clyde A. Malott, Professor of Geology, Indiana University, for calling these terraces to my attention.)

³G. C. Matson, "The Pliocene Citronelle Formation of the Gulf Coastal Plain," U. S. Geological Survey, Prof. Paper 98L (Washington: Government Printing Office, 1916), chart facing p. 172; also pp. 189-90; see also Frank Leverett, "The Pensacola Terrace and Associated Beaches and Bars in Florida," Florida State Geological Survey, Bull. No. 7 (Tallahassee, 1931).

line. In fact most of the land east of Royal Street is below ten feet in elevation (Fig. 4). The result is that this area is flooded in periods of exceptionally high water accompanying hurricanes.¹ The same is true for most of Blakeley Island and the causeway across the bay. The causeway is quite low and is closed for short periods two or three times a year when strong south winds blow waves up the bay.

North of the business district and the railway terminals is a low-lying, marshy area over a mile square, extending from the river to Three Mile Creek. Most of the land is unused, and roads and railways cross it on low fills. The eastern or river side of this swamp provided a large, unobstructed site for development of docks and industries along the river channel. It has been filled in during the last ten years to provide space for the State Docks and allied industries and railway yards. The lowness of the area has proved a benefit to Mobile since the land remained vacant and hence was available for large scale development. In time much of this area back of the river can be filled in for industries and railway yards.

A second low area, the interior continuation of the swamp north of the city, has markedly affected the growth and settlement of Mobile. It is the marshy valley of Three Mile Creek and separates Mobile from its industrial suburbs on the north. This has effectively checked the continuous spread of settlement northward from the city since the area was drained only recently. Only four roads cross it, only two of which are main traveled routes. A separate group of settlements has grown up north of Three Mile Creek outside the city limits. The city does not want to annex this part of its metropolitan area because of the expense involved in extending utilities across the low lying, uninhabited strip along Three Mile Creek. At present, therefore the Three Mile Creek area is both a natural and a political break in the metropolitan pattern.

The most conspicuous elevation in the vicinity of Mobile is Spring Hill, five miles west of the river (Fig. 4). Spring

¹Dates of past high water marks over 7.8 feet are: 1916, 11.6 feet; 1909, 7.8 feet; 1906, 9.9 feet; 1901, 8.2 feet; 1893, 9.2 feet; 1888, 8 feet; 1852, 8.8 feet (U. S. Weather Bureau, Mobile, Alabama).

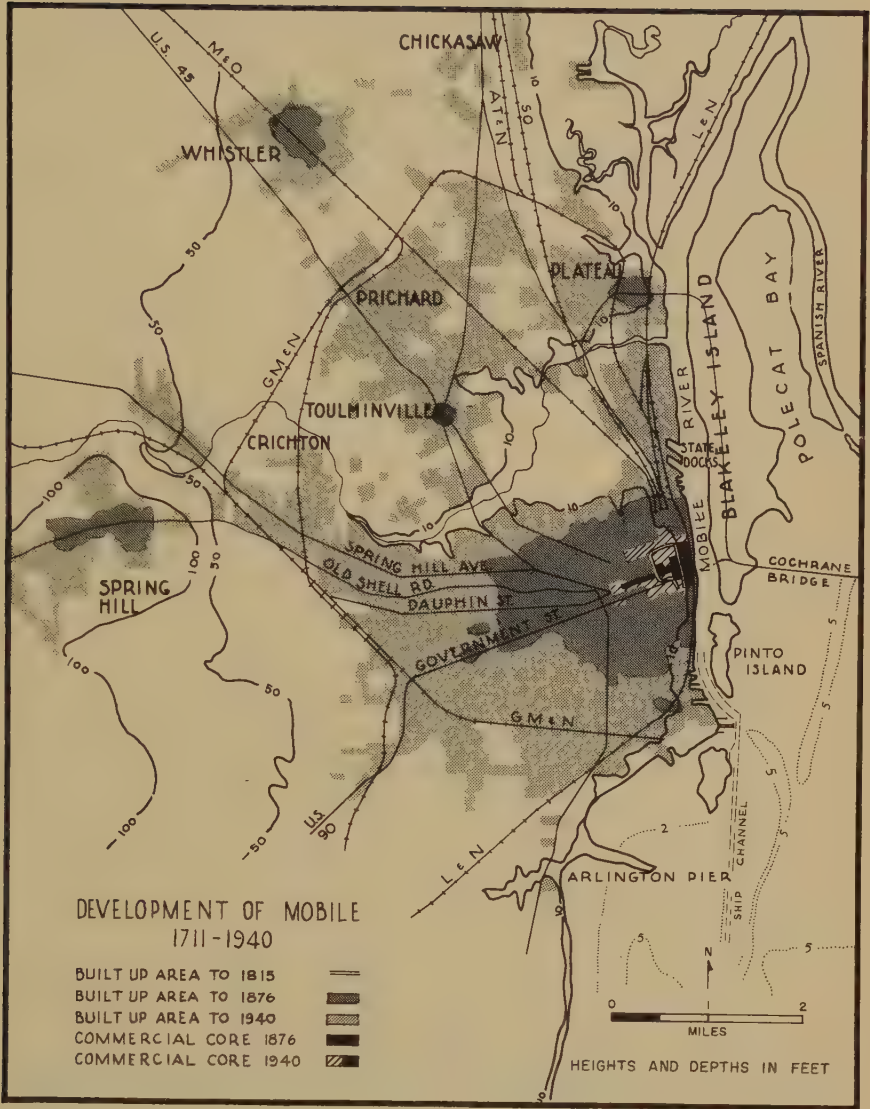


Fig. 4.--Development of Mobile, 1711-1940

(Sources: Built-up area 1815 and 1876 - G. M. Hopkins, City Atlas of Mobile, Alabama [Baltimore: Southern and Southwestern Surveying and Publishing Co., 1878]; built-up area 1940 - field mapping.)

Hill is an eastern extension of the low, north-south ridge forming the backbone of Mobile County. The hill is almost 200 feet high, rising some 150 feet in a mile from its base on the sloping coastal terrace of Mobile. It is heavily forested and provides an inviting location for suburban country homes. Spring Hill was settled over a hundred years ago by persons seeking a healthier site for residence than the low, malarial plain on which the main city was built. It has remained a high class rural suburb of Mobile ever since.

The soil underlying most of the city is a fine sandy loam. Near the river some of the soil is alluvial in origin. Bed rock is so far down that it is never reached by foundations. Large structures must be supported on piling, particularly in the lower sections which include the commercial core and the port, where most of the big buildings are needed. In spite of the unstable subsoil at the site, large structures have been built, including one 19 story building. On the whole, the foundation problems are not as severe as at New Orleans which is entirely underlain with unstable alluvium, although the two cities are quite alike in their generally unstable site qualities.

The site of Mobile is well provided with fresh water, although in most cases deep wells are needed to reach good water. The purity and relative abundance of water in underlying strata is a factor attracting paper mills to the city. The original settlers obtained water from Three Mile Creek. Later the city water system was supplied by wells in the western part of the city, now the site of Lyons Park. For many years however the city water has been obtained from reservoirs at Spring Hill, renowned for its large supply of pure water.

Stages in the Expansion of the Built-up Area in Relation to the Site

A brief summary of the progress of the city's adaptation to its site is shown by Figure 4. The area covered by the settlement during its first century of existence can be seen back from the river. By 1876 the built-up area had expanded rather evenly on all sides, but had grown more to the west toward high ground, a favored location for the better residences.¹ The isolated set-

¹Most of this growth had probably occurred before the

tlement on Spring Hill is shown on the map as well as the small centers at Toulminville, Whistler (seat of the Mobile and Ohio Railway shops) and at high Magazine Point (where some slaves, illegally run in just before the Civil War, had been settled).¹ The business district had pushed out a long projection west on Dauphin Street and had occupied an area of made land along the river east of the old town. By 1940 the town had expanded greatly, particularly in a westerly direction toward high land, so that an almost continuous strip of settlement ran out Old Shell Road to Spring Hill. Three Mile Creek still remained as a barrier, but haphazard settlements had grown up north of it. Over the whole urban area no houses had been built below the 10 foot contour line. Where the built-up area is shown below the 10 foot line, it is only along the river where port works and associated functions must be at a lower elevation in order to maintain contact with the water (Fig. 11).

Rival Sites for a Port City on Mobile Bay

It has been demonstrated that the present site of Mobile is the most satisfactory for a port city on the western side of the bay, at least on the upper reaches of the western shore. At times in the past, however, rival sites on the eastern shore and at the mouth of the bay appeared to have advantages over Mobile. At different periods one or the other of the rivals threatened to become the commercial port for the bay area.

Rivals on the Eastern Shore and on the Rivers

The most serious rival was Blakeley, established in 1813 at the junction of the Tensaw and Apalachee River channels on the eastern edge of the delta, about seven miles east and four-and-one-half miles north of Mobile (Fig. 3). By 1825 Blakeley had about 3,000 inhabitants and was larger than Mobile.² Brick business blocks, banks, and shipyards were built and the town was

Civil War, but there is no map or exact description of settlement for the period 1820 to 1876.

¹Courtesy Mr. John Glennon, Mobile, Alabama.

²L. J. N. Comings and M. M. Albers, A Brief History of Baldwin County (Fairhope, Ala., 1927), p. 44.

thriving. This was natural in view of the superior site and situation of Blakeley. The site was fifty feet high within a hundred yards of the shore and well over one hundred feet high a mile back, and although rougher than the terrace at Mobile, the site was drier and healthier. It had, moreover, deep water close to shore, in contrast to marshy shores and shallow water at Mobile. Excellent spring water also was available. Furthermore the back country at that time was more thickly settled than on the western side of the bay.

Blakeley's greatest advantage however was its better harbor. Being on the river, the harbor was protected, as at Mobile, but in addition was deeper and more spacious. The harbor's main asset, however, was its accessibility. There was only five-and-one-half feet of water across Choctaw bar at the mouth of Mobile River, whereas eleven to fourteen feet were minimum depths in the broad Tensaw channel. Because of the bar at the mouth of Mobile River, large vessels could reach Mobile only by going up Spanish River some ten miles to its junction with Mobile River and then proceeding down Mobile River to Mobile, another ten miles (Fig. 3). The result was that although Mobile was nearer the bay than Blakeley, Blakeley actually was closer to the open bay in terms of sailing distances for large craft. The Tensaw in addition was wider, straighter and probably a foot or two deeper on bars than the Spanish and Mobile Rivers.¹ When sail was the only means of propulsion it was difficult to move large vessels in restricted waters, and Blakeley therefore had a great advantage over Mobile.

Just as rapidly as Blakeley rose, it fell; by 1835 it contained only a handful of people and today is a deserted ruin, its former eminence marked only by crumbling brick foundations shaded by enormous live oaks festooned with Spanish moss. Authorities differ as to the reasons for Blakeley's decline and none give all the reasons. There appear to be three explanations:

¹Modern charts do not show this very well because dredging and silting has changed depths. A contemporary source in the State Archives at Montgomery, Alabama (Carte géographique statistique et historique d'Alabama [Paris?: Buchoir, 1825]) states that there was only eight feet of water at Mobile and twelve feet at Blakeley, and sketches some of the other advantages which Blakeley had at that time, concluding with the remark: "Il existe toutefois sous ce rapport une grande rivalité entre Mobile et Blakeley."

1. Speculation drove prices for lots so high that settlers intending to live in Blakeley continued on to Mobile instead. This is the most commonly stated cause for Blakeley's decline, but hardly seems important enough in itself.¹

2. Yellow fever killed many people in 1826 and 1828 and about this time Blakeley began to lose out to Mobile. Almost all of the inhabitants of Blakeley came from the north--from New York, and New England.² Their birthplaces and dates of death (mostly around 1828) can be seen on the tombstones in the old Blakeley cemetery. Because the inhabitants of Blakeley were new and unacclimated, in contrast to many of the habitants of Mobile, it is believed that they were more susceptible to Yellow Fever, although epidemics also have caused much suffering in Mobile at many times in its history.

3. About 1827 Pinto Pass, a mouth of Mobile River was dredged out to provide a depth in excess of the five-and-one-half feet prevailing up to that time.³ This made effective Mobile's location at the head of the open bay, whereas Blakeley remained ten miles up a river channel and thus not as easily reached by sailing vessels, which continued to be the main reliance for sea traffic for many years.⁴ The dredging of Pinto Pass probably was the most important reason for Blakeley's decline, although the coincidence in time of the other factors helped the decline.

In the early nineteenth century, before Mobile had begun to grow to a significant extent, other sites on the eastern shore also threatened her supremacy but none of them became as serious rivals as Blakeley. In the 1830's, for example, there was an elaborate plan for the development of a port at Alabama City on the site of the present Fairhope (Fig. 3).⁵ It seemed natural to have a city on the eastern shore of the bay as well as on the

¹This is the only reason given in Erwin Craighead, Mobile: Fact and Tradition (Mobile: Powers Printing Co., 1930), p. 144, and in Bernard Reynolds, Sketches of Mobile (Mobile: B. H. Richardson, 1868), p. 10.

²Comings and Albers, op. cit., pp. 44 and 55 indicate that this was the most important reason for Blakeley's decline; they also mention speculation.

³Annual Report of the Chief of Engineers for 1881, op. cit., Appendix K, p. 1170. It is not clear what depth was obtained. It was probably around ten feet. Writers in the early seventies speak of the river mouth having silted to seven feet after initial dredging.

⁴For calling this explanation to my attention I am indebted to Mr. John Glennon of Mobile. Hamilton, Mobile of the Five Flags, p. 247, states: "The old channel [to Mobile] was around by Blakeley and Spanish Rivers to the Mobile and this was one of the reasons for building the town of Blakeley."

⁵Hamilton, Mobile of the Five Flags, p. 217.

western side. Alabama City was closer to the bay mouth than Mobile or Blakeley, had slightly deeper water than Mobile (ten to twelve feet) and hence was an easier point for sailing vessels to reach, while river steamers could easily go down the bay to the proposed port to transfer their cargoes. The site was high land, easily accessible, healthful, and somewhat protected by Pt. Clear from bay storms moving up the bay. A pier was built out to deep water, lots were sold and the site was energetically promoted by New Orleans and New York interests. The financial panic of 1837 stopped work and the subsequent growth of Mobile made success of the enterprise hopeless.

In early American times St. Stephens, some sixty miles north of Mobile, became an important port (Fig. 3). The river narrowed above this point, thus making it the head of sloop navigation on the Tombigbee. For a few years St. Stephens was the capital of the Bigbee territory and the seat of the land office. Claiborne, about twenty-five miles east of St. Stephens, occupied much the same relative position on the Alabama River. With the advent of the steamboat in the 1820's these towns lost their advantages. Many residents of St. Stephens moved to Mobile.

Port Rivals at the Mouth of the Bay

Dauphine Island at the mouth of the bay became another serious threat to Mobile's growth. Initially as described in Chapter II, the deep, protected water of Pelican Bay on the south side of Dauphin Island provided an excellent harbor in which ocean going sailing ships unloaded.¹ A considerable settlement sprang up and a sort of dual city, Mobile, the capital of the interior, and Dauphin Island, the port, developed. The duality resembled the situation in Latin America, where Lima and Callao, Caracas and La Guaira, and other port-capital combinations were established. Mobile on the mainland was in better contact with the hinterland and the Indians since Dauphin Island was difficult to reach by Indian canoes. Dauphin Island, however, had a better climate, particularly in summer when Gulf breezes alleviated the heat. This was a reversal of conditions in much of Latin America where the capital, in the cool highland, had a better climate.

¹Hamilton, Colonial Mobile, pp. 165 ff.

For a while Dauphin Island seemed destined to outstrip Mobile because of its superior climate and its deep water harbor. In summer all who could, including the governor, moved there. The abundance of fish for food, especially in the summer season, was a strong added attraction. However, few crops could be grown and there was very little wood. Floods also were dangerous on the low-lying island exposed to Gulf storms. In 1717 a severe storm closed the passage to Pelican Bay and the harbor began to silt up, losing most of its usefulness. This relegated Dauphin Island to a minor role, although a settlement, supported by fishing, has existed there ever since.

Although Dauphin Island never again regained its relative importance, proposals have been made from time to time to utilize it or some other bay-mouth site as an outport for Mobile because the water in Mobile Bay was so shallow that large vessels could not proceed up the bay. Ocean vessels were anchored in deep water at the mouth of the bay, at the Lower Fleet (Fig. 3), and cargoes to and from Mobile were lightered to the ships. In the 1890's the Bay Shore Railroad (now a branch of the Mobile and Ohio) was built to Alabama Port to facilitate movement of passengers and perhaps develop an outport at that point. Alabama Port never became important; today the railroad is abandoned and little remains to mark the enterprise. In 1885 a serious proposal was put forward to create a deep water port in the relatively deep anchorage inside Mobile Bay just north of Dauphin Island.¹ Under the plan it was proposed to connect the outport with Mobile by a railroad built across the shallow portion of Mississippi Sound (only about two feet deep) between Dauphin Island and Cedar Point, and then along the Bay shore to Mobile. Many Mobilians feared that this would injure Mobile but the sponsors of the project pointed out that such dual cities were common, such as Bremen and Bremerhaven, Newcastle and South Shields, and many others. This proposal never was carried out; instead of the city coming down to deep water, a channel was dredged to Mobile and deep water brought to the city.

In natural conditions Mobile and Dauphin Island are like Houston and Galveston: a barrier island settlement on open water and an interior city linked by a channel through a bay to the

¹H. Austill, Dauphin Island (Mobile, 1885).

ocean. The difference is that Galveston did develop as a port and was connected with the mainland by rail. In spite of this a channel was dug to Houston, which became the chief port. On the basis of this example it seems likely that if Dauphin Island had been developed as a port, deep water eventually would have been brought to Mobile, especially since the channel was less difficult to dredge than the one at Houston.¹

¹Albert Bushnell Hart, writing in 1910, predicted: "Mobile, which is a place with increasing foreign commerce, can never hope to lead deep water to its present wharves, but about twenty-two miles below the city is an opportunity to bring large ships nearly inshore, and that is likely to be the future port of Mobile." (Southern South [New York: D. Appleton and Co., 1910], p. 229.)

CHAPTER IV

MOBILE AND ITS SUPPORTING AREAS

Mobile does not exist in a vacuum; it draws its support from surrounding areas. In general the nearby areas contribute a greater percentage of their urban supporting capacity to Mobile than do distant areas. The amount of support Mobile receives from surrounding areas however is not dependent solely on the nearness of these regions to Mobile. It depends on: (1) the volume of consumption and production in the areas, (2) the type of consumption and production, (3) the routes and connections between the areas and Mobile and, finally, (4) the nearness of the areas to Mobile and the consequent absence of competition or attraction from other large centers.

The character of the surrounding country thus must be established in order to understand the areal support of the city. Likewise the character of the connections, of the routes of travel, to Mobile must be investigated in order to determine precisely the city's areal support. Character of areas might well be called the static aspect of the city's support while transport connections approximate more nearly the dynamic or kinetic aspects. Transport connections will be analyzed in the final chapter; in this chapter the character of the surrounding areas will be presented and will serve as an introduction to the concluding two chapters on localization of functions in the city and on transport connections to Mobile. Four surrounding areas will be discussed in order of increasing size: Mobile Bay, the tributary coastal plain, the Mobile Basin, and the South and Middlewest.

Mobile and the Resort and Fishing Communities of Mobile Bay

For the most part the shorelines and the littoral immediately back of the shores of Mobile Bay and the Gulf are either low-lying or sandy, and hence unproductive. With the exception of the port of Mobile, therefore, the few settlements on the bay

are either resort or fishing communities. In either case, the communities draw their support from the water rather than the land. Because of the proximity of the specialized bay settlements to Mobile, they are closely tied to the city, and contribute to the support of the metropolis, as well as depending on it for much of their own support. Resort communities are more numerous than fishing villages, and obtain most of their visitors from Mobile.

Resort Communities on the Eastern Shore

The northeastern coast of the bay is the only high shoreline and therefore is the most desirable. For this reason it has always been a summer resort area for Mobile. In British colonial times it was even suggested that the garrison and government be permanently moved from Mobile to the healthier eastern shore and for the past century a considerable exodus has been the rule in summer. Until the bay bridge was constructed in 1927, bay boats plied regularly from Mobile to Daphne, Fairhope, Pt. Clear, and landings in between, carrying many excursionists for day, week-end, or season trips to cottages and hotels in the east side communities. Today the whole eastern shore is reached quickly by automobile from Mobile and, with a free bridge across Mobile Bay, commuting is frequent between the central city and the eastern shore communities.

The most famous resort is Pt. Clear which juts out into the bay about halfway down the eastern shore. This point is so placed that it receives cool south winds off the open bay and Gulf. The shore is lined with cottages along a board walk; for years a large hotel, recently burned and just now rebuilt, attracted summer visitors from Mobile and the whole Deep South. Pt. Clear, however, gets most of its visitors from Mobile and is so intimately tied to it that it should be regarded as a summer suburb.

The largest settlement on the eastern shore is Fairhope, with a permanent population of 1,500. For years it attracted summer excursionists from Mobile via bay boats, and still gets some, even though the automobile now permits trips to more distant places having better bathing. Although not as famous a resort as Pt. Clear, Fairhope was visited by greater numbers of less wealthy

tourists who went for a short stay over a holiday or week-end. Fairhope's primary support now, however, is from retired people living more or less permanently in the town. The high, wooded land provides a better site for permanent residence than lower-lying Pt. Clear. In winter and spring a few tourists also visit the town. The town is a single tax community, started in the 1880's by emigrants from the Middle West, and in addition to its residential and tourist functions serves as a minor commercial center for the farm population of the surrounding territory.

The Gulf Coast at Gulf Shores and Gulf State Park is the resort area most frequented by Mobilians who wish to make a week-end or holiday excursion for bathing. The developed section of the coast is at the end of the road from Foley and is fifty-two miles from Mobile (Fig. 3). The automobile and the construction of a road has made this area accessible in recent years. Formerly it was difficult to reach, and the nearer and more accessible places, such as Pt. Clear, were built up and thus even today have more cottages. The advantages of the Gulf, however, are numerous. A wide, sandy beach, unexcelled for bathing, stretches along thirty miles of open Gulf Coast. Low sand dunes and bayous lie back of the coast. These effectively block any agricultural development but make an attractive recreational area, providing fishing and hiking. A paved road extends to Ft. Morgan, a large brick fort of Civil War vintage which is a tourist attraction. In addition to private facilities, the state has recently developed Gulf State Park, a well-equipped area of 4,251 acres, which attracts visitors from all over the nearby South. It is estimated, however, that day use will constitute 25 per cent of the park's patronage, week-end holiday use, 60 per cent, and vacation use only 15 per cent.¹ Some of the cabins are occupied in winter and spring, but summer use is by far the most important, since the winter season is too cold for swimming. The park is new and has only thirty-four cabins. This already has proved to be an entirely inadequate number and in all probability will be increased. Because of its attractiveness the park should develop rapidly in the next few years.

¹Preliminary Report of the Alabama Park, Parkway and Recreational-Area Study (Montgomery: State Commission of Forestry and National Park Service, Nov. 1, 1938), p. 76.

Resort Communities on the Western Shore

Since the western shore of Mobile Bay is rather low-lying, it has not been developed as much as the high portions of the eastern shore. Nevertheless, there are numerous cottages along the shore immediately south of Mobile. The most used areas for summer homes, however, particularly of the better type, are the banks of Dog River, a tidal estuary parallel to the bay, only seven or eight miles southwest of Mobile. Over a hundred homes and cottages line its banks but they are not clustered as closely as the fifty cottages at Pt. Clear. Before the advent of the automobile it was quite customary for Mobilians of means to have a home in the city and a summer place on nearby Dog River. The custom remains, although commuting is now the rule, and some people even maintain permanent residence on Dog River.

The nearest open Gulf beach is Dauphin Island only 30 miles from Mobile. In 1939, the sum of \$900,000 was authorized for the construction of a toll bridge to connect the island with the mainland and open it to tourists. Because of high bids, however, the project was postponed. In addition to the beach there is excellent fishing and a quaint old settlement which should attract visitors. Mobile hoped to attract some of the summer tourist trade going to the Mississippi and Florida coasts, but the main users of the island would probably have been the nearby Mobilians.

As indicated before the resort communities receive more support from Mobile than they contribute, since they are integral parts of the city's residential pattern of living. Nevertheless they do attract visitors from outside the region who satisfy many of their needs in Mobile. The place attracting the greatest numbers of tourists is Bellingsrath Gardens, the estate of Mr. Bellingsrath on Fowl River, near Mobile Bay, south of Mobile. In 1939 about 58,000 visitors entered the gardens.¹ More than 80 per cent of the visitors came in winter, especially in February and March. A study of registrations shows that most of the visitors came from the Middle West and Middle South (Fig. 5). Mobile lies between Florida and New Orleans; winter visitors from the Middle West to the South therefore find it a convenient place to stop,

¹Courtesy Mr. Bellingsrath, owner of Bellingsrath Gardens.

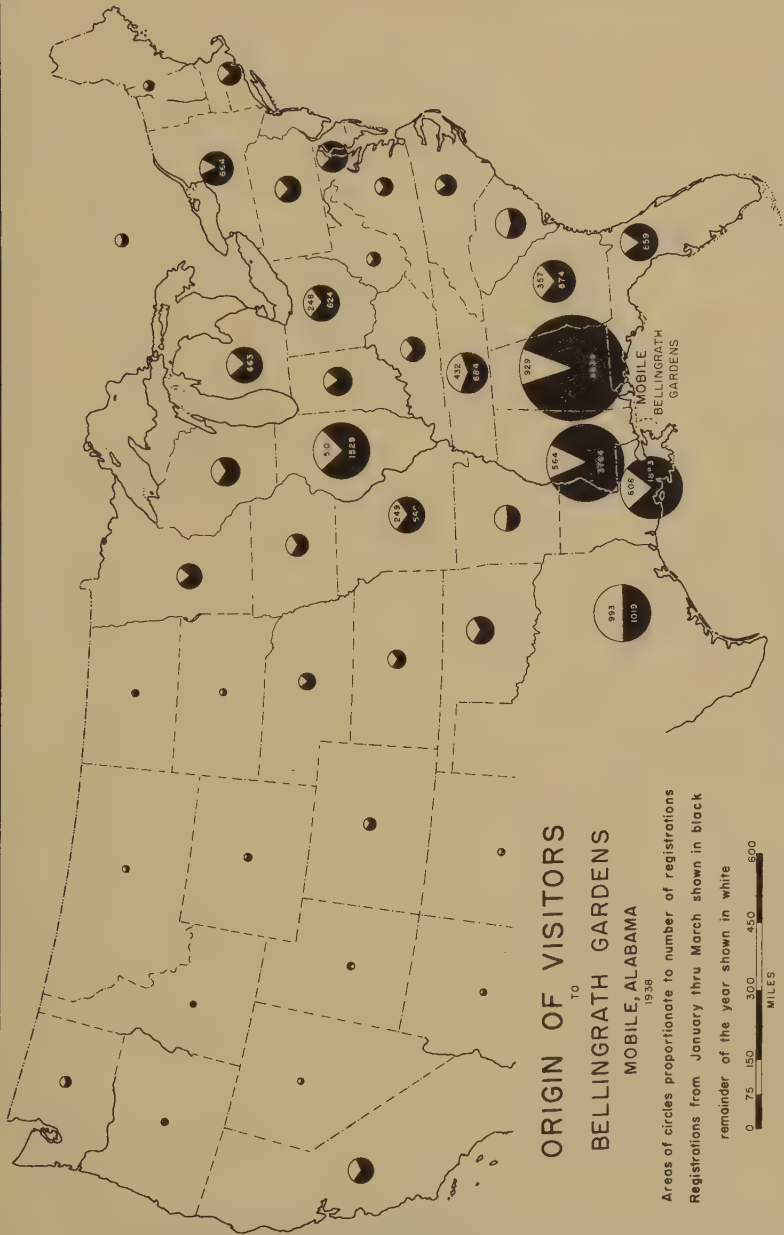


Fig. 5.--Origin of visitors to Bellingrath Gardens, 1938

while it is not on the route to Florida for visitors from Middle Atlantic and New England states.

Fishing Villages

While fishing is carried on at many points along the Bay, Gulf, and bayous, supporting individual fishermen at many places, two centers are of major importance in their relation to Mobile since their concentrated population furnishes far more customers than isolated fishermen do for Mobile metropolitan services.

By far the most important is Bayou Labatre, about two miles up a tidal stream from Mississippi Sound, at the head of navigation for small boats, about thirty-five miles south-southwest of Mobile (Fig. 3). Bayou Labatre, a community of about a thousand inhabitants, is entirely supported by fishing. Many small sailing vessels, with auxiliary engines, put out from the town to fish in the shallow, protected waters of Mississippi Sound. These shallow waters furnish shrimp and oysters, which are the most important catch, although a small number of many varieties of fish are also caught, especially when the boats go out into the Gulf. The shrimp and oysters are packed in canneries and shipped all over the South. Formerly the catch was much greater, but long continued fishing on the same grounds has seriously depleted the supply and competition from larger companies elsewhere has developed, with the result that Bayou Labatre is declining. Some of its labor has migrated to Mobile. The town, however, is second only to Biloxi as a shrimp and oyster center on the eastern gulf, but is much less important than the former.¹

The second fishing center (much less important than Bayou Labatre) is Bon Secour, a settlement of about 500, on the Bon Secour River, at the southeastern extremity of Mobile Bay (Fig. 3). The shallow waters of Bon Secour Bay and River and of Oyster Bay furnish excellent oysters which are the most prized variety in the Mobile Bay district.

The fishing villages on the bay draw their livelihood from

¹The total number of fishermen and oystermen in Alabama is 893, in Mississippi, 1,596 (Fifteenth Census of the United States: 1930. Occupation Statistics, Alabama [Washington: Government Printing Office, 1931], p. 7; Mississippi, p. 6). Almost all these fishermen are on the Gulf Coast; Mobile, for example, is credited with only 34.

the water, just as the resort communities do. The resorts, however, have always been intimately connected with Mobile, whereas the fishing communities are largely independent in their major function, the gathering and marketing of seafood. This separation is more complete now since trucks can operate directly out of the fishing centers. Even before the truck, much of the fish was taken by local boats directly to the New Orleans market. However, as indicated above, the proximity of the fishing village to Mobile causes them to look to the city for most of their metropolitan services.

Mobile and the Tributary Coastal Plain

The coastal plain surrounding Mobile is forested and sparsely populated. The sandy, light soil supports little save trees. Hidden in the green forest cover are small spots of semi-subsistence agriculture and a few larger islands of commercial production. More important by far than the few farm products are the products of the forest which are the main industrial support of Mobile and of most of the few small cities in the area dominated by Mobile.

Although forest cover is the marked feature of the coastal plain tributary to Mobile, the area is not entirely uniform in character. In many places it is rolling, even hilly. South of Mobile, along the coast back from Mobile Bay, the land is generally low; the elevation gradually rises as one moves north until one reaches the Lime Hills area, about fifty-five miles north of Mobile. The land between Mobile and the Lime Hills area is heavily forested, with rolling north-south ridges rising gradually from the delta plains and bottoms along Mobile River to heights of three to four hundred feet, fifteen or more miles from the river. The Lime Hills region merges into the Red Hills which it resembles closely.¹ The pine forested Red Hills surface varies from rolling to quite rugged and fades out rather sharply into the level stretches of the Black Belt about 125 miles north of Mobile.

This cross section of the coastal plain, an area about fifty miles wide on either side of Mobile, pinched in slightly

¹Roland M. Harper, Resources of Southern Alabama, Special Report No. 11, Geological Survey of Alabama (University, Alabama, 1920), p. 26.

along the coast, wider toward the interior, and extending north of the city about 100 miles is the area in which Mobile is the dominant city. In this area Mobile handles much of the wholesale and high class retail trade, the Mobile newspapers circulate and Mobile is the chief urban center in most respects (Figs. 1 and 7).

Forests

Approximately 80 per cent of the land within one hundred miles of Mobile is forested.¹ This is 10 to 20 per cent higher than the average for the southern coastal plain. By way of comparison, western Washington, the most heavily forested region in the United States, is 85 per cent forest covered.² The area around Mobile, therefore, is one of the most densely forested regions in the country, as Figure 6 shows. This does not mean that the timber stand per acre is particularly heavy. Much of the area is only lightly forested with scattered small trees since it has either been burned over or logged off. Over 70 per cent is second growth. Almost half the forest area is classed as under saw log size--either small saplings or even smaller trees useful now only as reproduction stock. Forty to 50 per cent of the trees are under two inches in diameter; over two-thirds are under four inches. In timber volume per acre western Washington has over ten times the board feet volume of southwestern Alabama. If smaller stock (non pulping wood) is included, the contrast would not be quite so marked but would still be enormous.³

¹Compiled from Forest Survey Releases by the Southern Forest Survey, I. F. Eldredge, Regional Survey Director, Southern Forest Experiment Station, New Orleans, Louisiana: No. 33, A. R. Spillers, E. B. Faulks, P. R. Wheeler, Forest Resources of Northwest Florida (1938); No. 35, Forest Resources of Southwest Alabama (1938); No. 39, E. B. Faulks, Forest Resources in the Longleaf Pine Region of Mississippi and East Louisiana (1938).

²U. S. National Resources Committee, Forest Resources of the Pacific Northwest (Washington: Government Printing Office, 1938), p. 24.

³In western Washington on 15.7 million acres (13.4 millions in forest) there are 282 billion board feet (lumber tally) of timber (Forest Resources of the Pacific Northwest, op. cit., p. 52); in southwestern Alabama, by way of contrast, on about 8 million acres (5.73 millions in forest) there are 12 billion board feet (International one quarter inch rule which closely approxi-

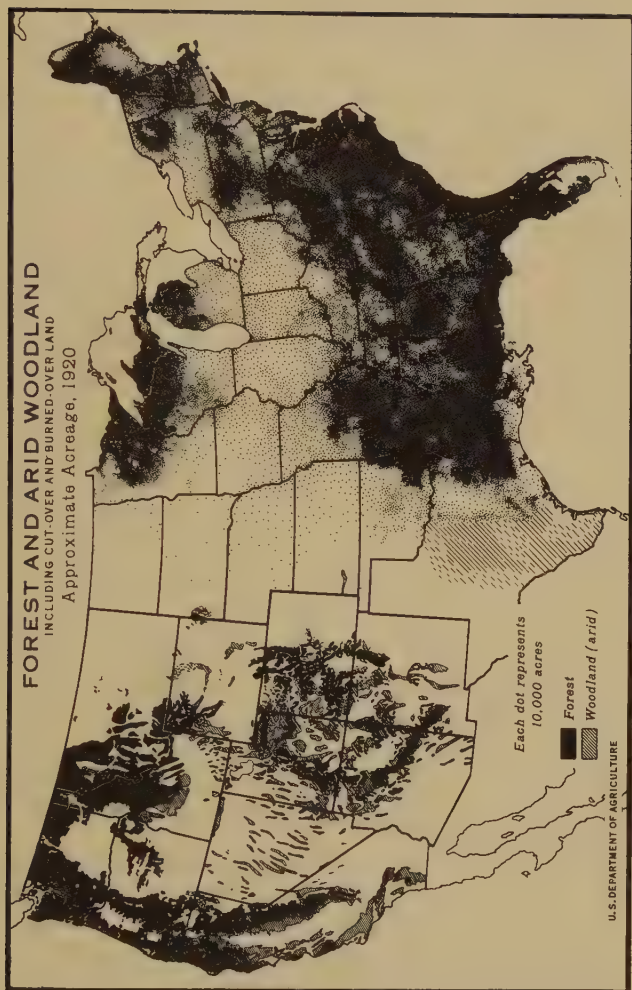


Fig. 6.--Distribution of forests in the United States

The bright side of the forest picture is the rapid growth of the trees, especially under proper forest management.

Over 65 per cent of the forest acreage in southernmost Alabama and contiguous Mississippi and Florida is in turpentine type pines--the longleaf, slash varieties. Non-turpentine pines, mixed hardwoods, and cypress comprise the remainder. The non-turpentine pines, or shortleaf, loblolly types are dominant on the interior margin of the coastal plain and are generally found on higher rolling land. Mixed hardwoods, including gums and some oaks, and cypress grow densely in bottoms along streams, ponds, and in swamps. On the highest uplands are also found a few hardwoods, such as scrub oaks.

The openness of the forest stand is reflected in the extensive grazing carried on in the forest. According to calculations made from five hundred sample plots on the Gulf coastal plain by the Southern Forest Experiment Station, 87.6 per cent of the forest area is grazed.¹ In the longleaf pine areas the percentage is 97.5 per cent. Heavy grazing is carried on in 33.8 per cent of the whole area, medium grazing on 38.9 per cent, and light grazing on 14.9 per cent.

In the spring the old grass commonly is burned off to allow tender young grass to grow up to feed the cattle. This practice has been found to be beneficial, if the fires are kept under control.² Control at present is unsatisfactory, but the danger from forest fires in this moist area is considerably less than in most other sections of the country.

The extensive forests, the absence of settlement over long stretches, and the presence of cattle on unfenced range remind one of large areas of the so-called Wild West. Much of the countryside appears to be just as undeveloped as our remote, intermountain West.

mates green lumber tally). (Forest Resources of Southwest Alabama, op. cit., pp. 1, 19.)

¹E. W. Gemmer, "Grazing in the Pine Forests of the Gulf Coastal Plain," Southern Forestry Notes (issued by the Southern Forest Experiment Station, New Orleans), No. 30, November, 1939.

²Opinion of Mr. E. L. Demmon, Director, Southern Forest Experiment Station, New Orleans, based on unpublished research.

Forest industries in Mobile

In addition to grazing, the forests are used for lumber, pulpwood, firewood, and naval stores. Although much of the large timber has been cut, there are still many active sawmills in the area, with a marked concentration at Mobile. In the last ten or fifteen years three large paper and pulpwood mills and one small mill have been built at Mobile. These mills use much wood that formerly would not have been utilized. Naval stores are also gathered extensively in the turpentine forests around Mobile; a characteristic sight is the turpentine cup on the side of a tree. Hidden in the forests are many small turpentine stills and in Mobile there are several larger plants.

The paper industry.--The largest paper mill in Mobile is the Southern Kraft Company's plant just north of the city limits. Approximately 1,800 workers were employed in the Mobile mill in 1940 with an additional 1,000 or more in the woods.¹ The plant makes as much paper as any in the South; in 1940 it normally shipped out about 375 tons daily, or about 140,000 tons a year. The product is kraft (brown) paper used for boxes, wrapping, and other uses. A paper bag plant is operated in conjunction with the mill and employs about 500, mostly women.

The plant was built in 1929; so desirous was Mobile to secure it that over \$100,000 was raised by subscription and given to the company as an inducement.² Apparently a location at Mobile however had strong natural advantages over rival sites, particularly in the availability of pulpwood and pure water--the most important two factors responsible for locating a paper mill.

Pulpwood represents 95 per cent of the raw materials used. Some chemicals, including salt cake, make up the remainder. Some of the chemicals are produced in a plant controlled by the company, located next to the mill. Seventy-five per cent of the pulpwood comes from within a 50 mile radius of Mobile and most of this amount comes from Baldwin County across the bay. One hundred and fifty miles is the outer limit of the area from which pulpwood is obtained. The company goes farther afield than neces-

¹Interview with Southern Kraft Company, Mobile, Alabama.

²Highlights of 75 Years in Mobile (Mobile: First National Bank, 1940), p. 96.

sary, it says, in order to spread out cutting and give business to many farmers. Most of the wood is supplied by contractors, but the company has bought up some lands, much of which it keeps in reserve. About half the logs are brought in by barge; the remainder primarily by rail.

Less than 10 per cent of the paper goes to the South. Most of it is shipped to the Northeast. Very little is sent to the Middlewest because other mills of the same company, farther west in the South, handle that market.

Almost as large as the Southern Kraft Company is the Hollingsworth-Whitney Company nearby to the southeast, which began operation in late 1940 and is expanding. This company is a New England concern, operating mills in Maine. It built a Mobile plant to augment the declining output in its New England mills. Part of the pulpwood used at Mobile is made into wood pulp and shipped by water to New England to replace Swedish imports cut off by the war. A variety of other products are also made, including high grades of white paper.¹

Pulpwood supply area and water requirements are about the same as those for the Southern Kraft Company. Hollingsworth-Whitney has installed an especially elaborate system of wells, 100 to 300 feet deep, scattered over an area almost ten miles long and three miles wide. The company has taken great pains to insure a good water supply; it is estimated that its requirements alone are about five times that for the whole incorporated city of Mobile.

Hollingsworth-Whitney chose Mobile as a site because, in addition to favorable wood and water conditions, the city had an excellent transportation situation, particularly in the port facilities and services available. Because of its New England mills and market Hollingsworth-Whitney sought a tidewater site.

The third largest mill in Mobile is the National Gypsum Company's plant in the southern part of the city. It employs about 350 workers and makes wallboard and insulation board of many types, but no paper.² The Mobile plant was built in 1938 and is one of a chain the company has scattered over the country.

¹Data from Hollingsworth-Whitney Company, Mobile, Alabama.

²Interview with National Gypsum Company, Mobile, Alabama.

This company is the only one making insulation board out of pine in America. Other companies use softwood, such as cottonwood, or bagasse.

Fifty to seventy-five miles is the usual maximum distance from which pulpwood is secured, although some of the supply comes from as far away as 100 miles. Most of the wood comes in by barge, some by truck. The northeastern quarter of the country, from Chicago to New England is their main market; the West coast is second and is reached by water from the port of Mobile.

The smallest paper mill in Mobile is the Mobile Paper Company employing about 125 men in a plant at Crichton, on the western edge of Mobile. It makes cardboard, beer mats, and the like; normally it uses much waste paper as well as wood. Most of their supplies come in by truck. Their market is primarily the South and the Northeast.

The recent development of processes for using southern pine for many paper and allied products enables these paper-making industries to operate in Mobile. Since they have built large, substantial buildings representing heavy capital investments, the mills plan to operate permanently on a sustained yield basis of tree growth. In harmony with this plan, the paper mills tend to encourage conservation of the forests, in sharp contrast to small lumber mills operating on a "cut out and get out" basis.¹ The construction of these long-term industries represents one of the brightest spots in the new industrial development of the Mobile area and of other parts of the South and takes up some of the slack in employment caused by the decline of cotton.

Saw mills and other woodworking plants.--About a dozen saw mills operate in Mobile and its suburbs, with many more scattered through the countryside. In addition, about a half dozen woodworking plants make veneer, millwork and the like. About 600 to 900 men are employed in all.² The number of saw mills and

¹See, for example, Nineteenth Annual Report, Southern Forest Experiment Station (New Orleans, 1939), p. 2, which considers the paper industry a strong force for conservation, although pointing out that much yet remains to be done in improving conservation practices of paper mills.

²U. S. Bureau of the Census, Census of Manufacturers, 1937 (Washington: Government Printing Office, 1937), reports 807 in Mobile city alone as an average for the year, but this figure includes part time as well as full time employes. From interviews

woodworking plants is declining, as is shown by the many abandoned mills around Mobile. Close to the city, in fact most of the large timber in both pine and hardwood species, has been cut. Nevertheless considerable business is still carried on, much of it based on logs from a distance. In recent years the use of trucks has enabled cutting to be undertaken in formerly inaccessible places.

Naval stores and wood treating plants.--The naval stores industry in Mobile is old. Formerly it was practically all conducted by factors (resembling the cotton factors described in Chapter II), with headquarters and yards in Mobile. The factors contracted with operators in the woods who tapped the trees and distilled turpentine and rosin in many stills scattered through the woods. The products were marketed by the factors who furnished the operators with equipment as part of their pay.

The factor system still prevails to some extent. The largest and virtually the only factor remaining in Mobile is the Taylor-Loewenstein Company. This concern also has branches and yards at other points in the naval stores region extending from Mobile to Savannah. Today Taylor-Loewenstein, not only is a turpentine factor, but is also a general wholesaler of groceries and other products--a natural outgrowth of their supply services to operators. They also operate a large distilling plant.¹ In their plant at Crichton they employ about forty, at their yards in Prichard about fifty, and another fifty or more in their offices in Mobile.

In addition to the Taylor-Loewenstein Company three other distilling plants in Mobile employ a total of about sixty-five workers. These plants distill the gum of the trees to produce turpentine and rosin. The tendency now in the naval stores industry is to concentrate production in larger stills in towns in order to produce a higher grade product. This concentration of gum distillation in the cities has been made possible by the use of trucks for collecting the gum and hauling it to the distill-

with most woodworking plants in 1940 the author secured an estimated total of about 600 employees. The two figures are obtained differently, but it may well be that fewer were employed in 1940 since at least four fairly large concerns employing an estimated 250 men had closed since 1938.

¹Courtesy of Mr. A. C. Levi, head of Prichard yard for Taylor-Loewenstein Company, Mobile, Alabama.

eries.¹ The largest concern employs about forty men and produces naval stores from stumps, which it grinds up in a large plant.

In addition to distillation plants there are two metal working factories in Mobile engaged in manufacturing supplies for naval stores operators. One is fairly large, employing about 120 persons. About 60 per cent of its business is in turpentine supplies. The whole output of this factory was formerly naval stores supplies, but the depression in the industry forced the concern to branch out into some other sheet metal lines.²

Two large timber preserving plants, employing 125 and 50 men respectively, round out the roster of forest industries in Mobile. Coal tar (brought mainly from the Birmingham area) is re-distilled into creosote and applied to timbers. In heavy treatment the creosote cost is greater than the timber cost. Timber is secured from a 75-100 mile radius; the market is the whole United States and some foreign countries.

General effect of forests on Mobile

During most of the last sixty years the forests have been Mobile's most important support, and with paper making assuming a leading role today, they have taken on a renewed importance to the city. In addition to providing raw materials for Mobile's most important industries, the forests have affected Mobile in a negative manner, since the rather poor forest land of the coastal plain does not support a fraction of the population that even moderately good farm land would, and therefore limits the growth of even a fairly dense rural population to support commercial and other services in the city.

In 1919 Roland M. Harper contended that Mobile "would probably be as large as it is even if the country within fifty miles of it was an absolute desert."³ This statement was intended to emphasize the absence of agricultural support and the importance of the port of Mobile. It had a germ of truth in 1919 when the forests were largely cut over and before paper making had be-

¹Interview with Rosin Turpentine Corporation, Mobile, Alabama.

²Interview with Lerio Patent Cup Company, Mobile, Alabama.

³Harper, op. cit., p. 70.

come Mobile's leading industry. Today, however, the industrial usefulness to Mobile of the formerly almost valueless coastal plain is the big geographical news of the city.

Agriculture in the Tributary Coastal Plain

Farming, outside of a few scattered spots, is of little importance in the coastal plain tributary to Mobile. Less than 30 per cent of the land is in farms, and less than 10 per cent is harvested crop land.¹ Corn is the leading crop, taking up over 60 per cent of the acreage in harvested crops in 1934. Cotton, with approximately 20 per cent of the acreage, is a poor second. Other crops trail far behind over most of the region.

Soils for the most part are light, sandy, and well drained. On the river bottoms, however, there are heavy alluvial soils, and there is even a considerable variation in the coastal plain soils themselves. Some are loamy sands and provide fairly good agricultural soils if fertilizer is added.

The northern tier of counties has more land in farms and more land in cultivation than the southern section. In the southern counties around Mobile, cotton is even less important than in the region as a whole. In these counties it takes up less than 10 per cent of the harvested crop land, thus emphasizing the fact that this area is outside the cotton belt.²

Although the southernmost portion of the coastal plain is heavily forested, it contains the best two islands of agriculture in the whole region. A combination of favorable soils and warm climate permits specialization in several early season truck crops.

The most highly developed agricultural district is in southern Baldwin County, east of Mobile Bay, along the level inter-stream divide near the center of the county, especially around Foley, Summerdale, and Loxley, with some productive land back of Fairhope (Fig. 3). This small district is the most productive agricultural area on the Gulf coast between New Orleans and Tampa.

¹Computed from U. S. Census of Agriculture, 1935: Farms, Farm Acreage, and Value, and Selected Livestock and Crops, Alabama, Mississippi [statistics by counties] (Washington: Government Printing Office, 1935).

²Ibid.

The soil, however, is but little better than that in much of the coastal plain and is made to produce only by application of large amounts of fertilizer. The district specializes in early season truck crops for the northern market with Irish potatoes by far the most important crop. In the county as a whole the acreage in potatoes is second only to corn. In 1938 4,772 carloads of Irish potatoes were shipped out by rail.¹ Two hundred and ninety-seven cars of sweet potatoes, 472 cars of cucumbers, and 387 cars of green corn, were also shipped. Other truck crops are grown, including watermelons, but their volume is less. Since the bay bridge has been open and free of toll, this relatively prosperous section has provided Mobile with the wealthiest part of its nearby trade territory.

On the western side of the bay, in southern Mobile County, is a somewhat analogous agricultural area on the level plain sloping down to the Gulf from the high backbone of Mobile County (Fig. 3). This area, between Theodore and Grand Bay, is an important truck district, but is not as large or productive as southern Baldwin County. There are also other spots around Mobile on the west side of the bay which are more productive than most of the scattered farming areas of the coastal plain. For this reason Mobile County is one of the leading producers of early season cabbage in the country. Other truck and orchard crops are also produced including pecans and watermelons; before the disastrous freezes of recent years Satsuma oranges were important and at present several Tung orchards are coming into bearing. Mobile County also produces, on dairy and general farms, most of the milk consumed in the city. The urban market thus aids agriculture in Mobile County and is another reason for its relative importance.

Mobile secures retail trade from these nearby farming districts. The area within which Mobile gets more than 50 per cent of the retail trade is shown in Figure 7. Central Mobile County, near Mobile and unserved by other centers, is the heart of this territory. Baldwin County is served by its own small towns, but nevertheless contributes much retail trade to Mobile because of its relatively wealthy rural and resort population (Fig. 8).

¹Baldwin County, Alabama (Bay Minette, Ala.: Baldwin County Commission, n.d.), p. 5.

Other Settlements of the Tributary Coastal Plain

Urban centers and towns are few in number and small in size on the relatively unproductive coastal plain. The largest two cities are on the sea coast and derive their livelihood from the sea even more than Mobile, although forest industries are important in each.

The largest city is Pensacola with a population of over 50,000. Although Pensacola is only about fifty miles from Mobile, its large size places it outside the Mobile tributary area for many functions (see next section) and makes it a competing point. Pensacola's chief support is the naval air station, the main air training station of the United States Navy since the last world war. Pensacola is also an important resort center, especially in summer. The city's location close to Gulf beaches draws many visitors to the town especially as it makes a specialty of handling tourists and providing attractions for them. The result of the tourist trade and the air station is to create a pleasant residential city quite in contrast to industrial and commercial Mobile. Pensacola also has an excellent harbor and has some port business, principally lumber exports and fertilizer imports. The port facilities and rail connections of Pensacola are much poorer than at Mobile however and its port business is much smaller. Industry in Pensacola is confined to some forest products plants and two large fertilizer factories.¹ Pensacola's main commercial handicap is proximity to the larger city of Mobile, just as Mobile's main liability is the nearness of the still larger city, New Orleans.

The second largest urban center in the Mobile area is Pascagoula and its neighboring industrial satellite, Moss Point, about 40 miles southwest of Mobile. The two towns together have a population of about 10,000. They are supported principally by sawmills, a paper mill, and the recently re-opened shipyards run by Ingalls at Pascagoula. The sea and the forest combine to support this center. The cities of Biloxi and Gulfport lie farther west on the Gulf coast. Although they are slightly nearer Mobile

¹Pensacola is slightly nearer to areas buying large amounts of fertilizer (southeastern Alabama and contiguous Florida and Georgia) than is Mobile, and consequently has lower rail rates than Mobile.

than New Orleans, they fall more in New Orleans territory, since the larger city extends its influence farther than Mobile can.

Interior towns are few and small, as might be expected in the sterile, unproductive coastal plain. Within a radius of a hundred miles of Mobile there are only nine towns with more than a thousand population and none of these has more than 2,500 inhabitants. The towns are scattered and serve as service centers for the sparse rural population, as well as sawmill centers for the surrounding forests.

Tributary Areas of Mobile for Representative Functions

As indicated before, the tributary coastal plain is the area in which Mobile is the dominant city for a majority of metropolitan functions. Figure 7 delimits the areas within which Mobile secures more than 50 per cent of the wholesale grocery, meat, produce, and drug business¹ as well as the area within which Mobile newspapers have 50 per cent or more, and between 15-50 per cent of the out-of-town newspaper circulation.²

The wholesale grocery line is the nearest to Mobile. Groceries are such universally sold commodities that many small towns can support wholesale grocery firms. Since the advent of the automobile and truck, the small towns have been able to compete on almost equal terms with the large transportation centers.³ Mobile has actually lost much wholesale grocery trade in the last two decades.

Wholesale meat and produce distribution extend out slightly farther from Mobile than wholesale groceries, since the equipment needed to handle and ship these commodities is too costly for a small distributor. Small towns therefore compete less in

¹The limits were obtained largely by questioning retailers in the country surrounding Mobile. They are much more accurately defined than if they had been drawn solely on the basis of wholesalers' claims in Mobile. Furthermore the statements of many retailers at varying distances from Mobile were checked one against the other, in order to make sure of the location of the lines.

²Data secured from Mr. Clark Hall, Circulation Manager, Mobile Press-Register.

³Based on interviews with Mobile wholesalers.

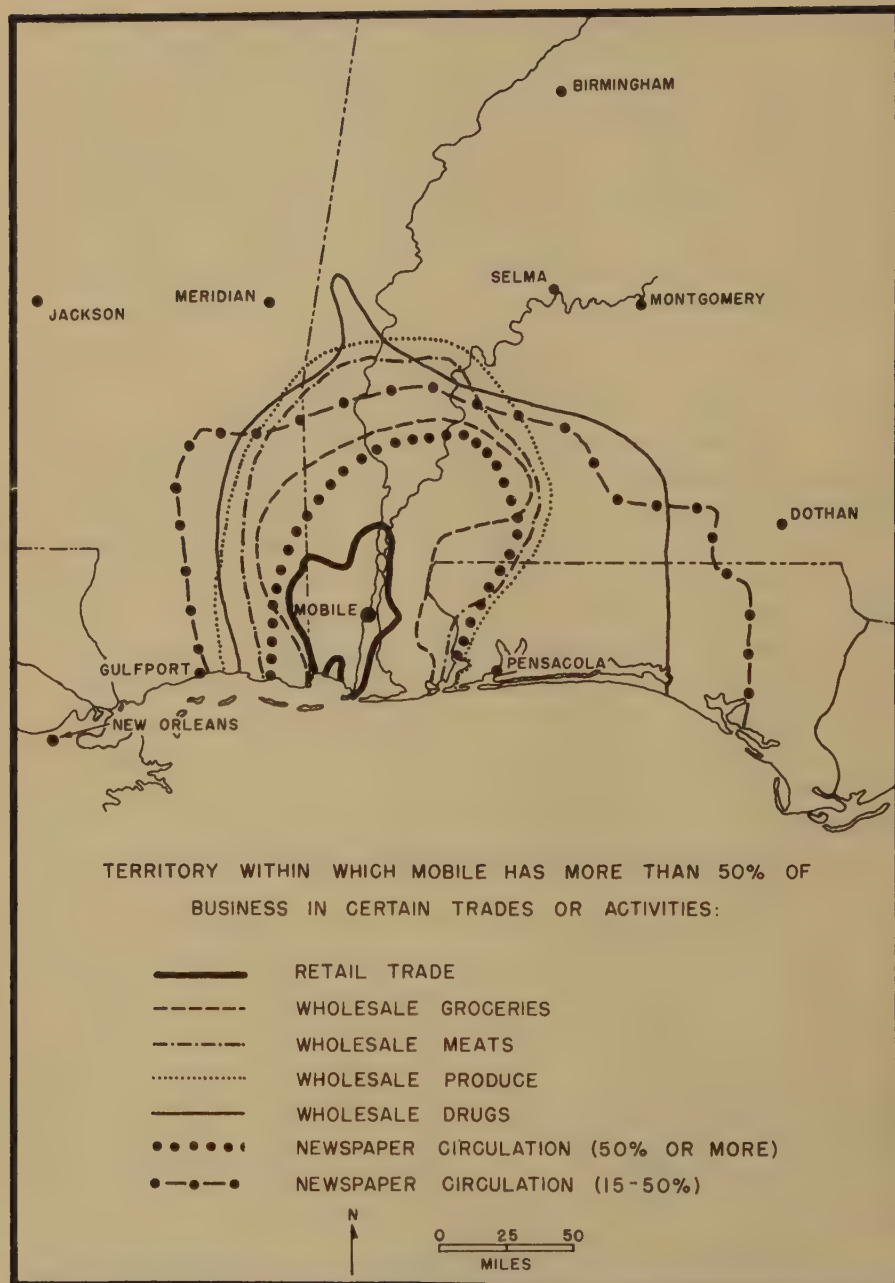


Fig. 7.--Tributary areas of Mobile for selected trades and activities.

these lines than in the wholesale grocery trade. Mobile's meat and produce business has been increasing, primarily because of the increased consumption of fresh meats, vegetables and fruit. The truck has aided Mobile in this trade, because it enables these perishable foods to be distributed quickly and economically throughout the countryside.

Wholesale drug distribution is the only wholesale line on the map extending beyond Pensacola. Pensacola has no wholesale druggists and consequently its territory is served by Mobile. In the lines previously mentioned, Pensacola wholesalers handled the territory closest to Pensacola, although Mobile, since it is larger had a larger territory, just as still larger New Orleans has a larger territory in most lines than Mobile.¹

Other wholesale lines are distributed from Mobile, but they do not monopolize a definite territory to the extent of the lines described above. Mobile, for example, is a hardware distributor, but the larger towns in the Mobile territory apparently buy most of their hardware direct from large centers, such as Louisville or St. Louis. The small stores, with small turnover, on the other hand generally buy more from Mobile. If the pattern were mapped in detail it would be spotty and full of holes; it could not be bounded by one line as in the trades just discussed.

A clue to the intensity of the business handled in the Mobile tributary area and a picture of the fraying out of the connections around the edges is shown in Figures 8, 9, and 10.

Figure 8, showing out-of-town charge accounts for Mobile's largest department store in reality portrays a distribution more like wholesale than retail trade. The larger centers have most of the charge accounts, since they have most of the persons able to afford buying in the larger cities. Rural buyers customarily satisfy their meager wants in the nearest small centers. Density of population and distance to Mobile are important factors influencing the distribution of these customers. Pensacola, even though it has some fairly large stores, nevertheless has a large enough well-to-do population to support many charge accounts in

¹In meat distribution, however, Mobile distributors go half way to New Orleans. In this case the distributors are practically all branches of national houses and consequently the territory is divided up more on an equal area basis.

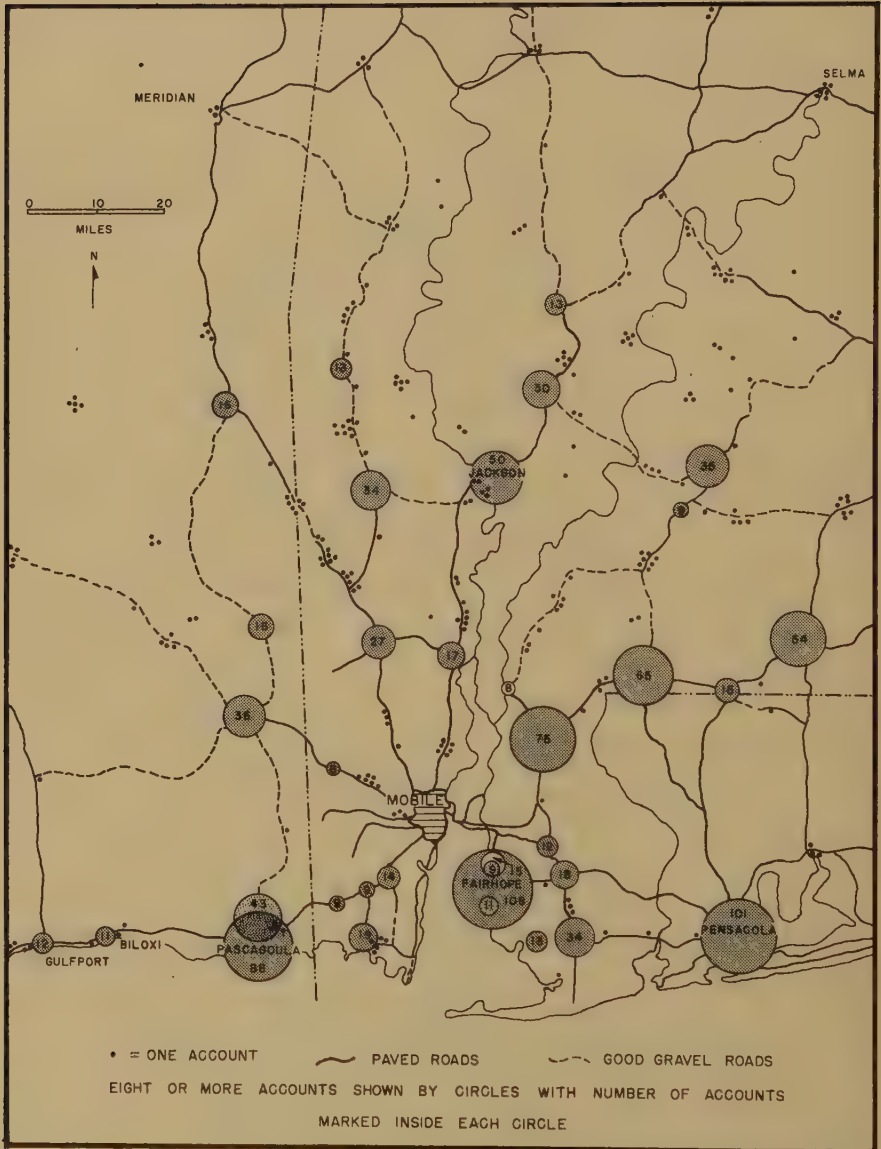


Fig. 8.--Distribution of out-of-town charge accounts for Mobile's leading department store, 1940.

Mobile, the nearest large city. Fairhope, a smaller town, likewise has many accounts since it is close to Mobile, and has a considerable number of relatively wealthy inhabitants. The large centers of Pasagoula and Moss Pt. give their closest large city, Mobile, much business. Convenience of road connections appears to affect the distribution of accounts. Thus the area north of Pensacola, although it is sparsely populated, also has no direct road connection with Mobile; partly for this reason it has no accounts shown on the map.

One should not assume from the map that Mobile has a large volume of out-of-town business. For the store in question it estimated that out-of-town sales represent only 18-20 per cent of the total business.¹

The map (Fig. 9) showing the number of stores with three or more credit experiences with Mobile wholesalers coincides fairly well with the Mobile wholesale territory. The absence of data for a few small centers in Florida and Mississippi does not detract much from the general impression conveyed by the map, since there is practically no Mobile business in these sparsely populated zones.

The map showing country banks having deposits in Mobile banks (Fig. 10) indicates a wider spread for this service than for any of the others just discussed. To some extent this reflects Mobile's importance as a banking center. Many of the accounts in northern Mississippi and Alabama are known as cotton accounts, kept in Mobile to facilitate the movement of cotton from these areas through the port of Mobile. In the last few years of slow cotton movement, many such accounts have become inactive. Although Mobile is an important banking center, it does not have nearly as much, or widespread business as Birmingham or New Orleans. These larger centers have home offices of many important concerns; therefore buyers in small towns doing business with the large concerns find it convenient to buy exchange of these large cities. This can readily be done if the local bank has an account in Birmingham or New Orleans. Financial control particularly is a function associated with large metropolises and consequently in these lines Mobile faces competition princi-

¹Courtesy Mr. Collins, Credit Manager, Hammels Department Store, Mobile, Alabama.

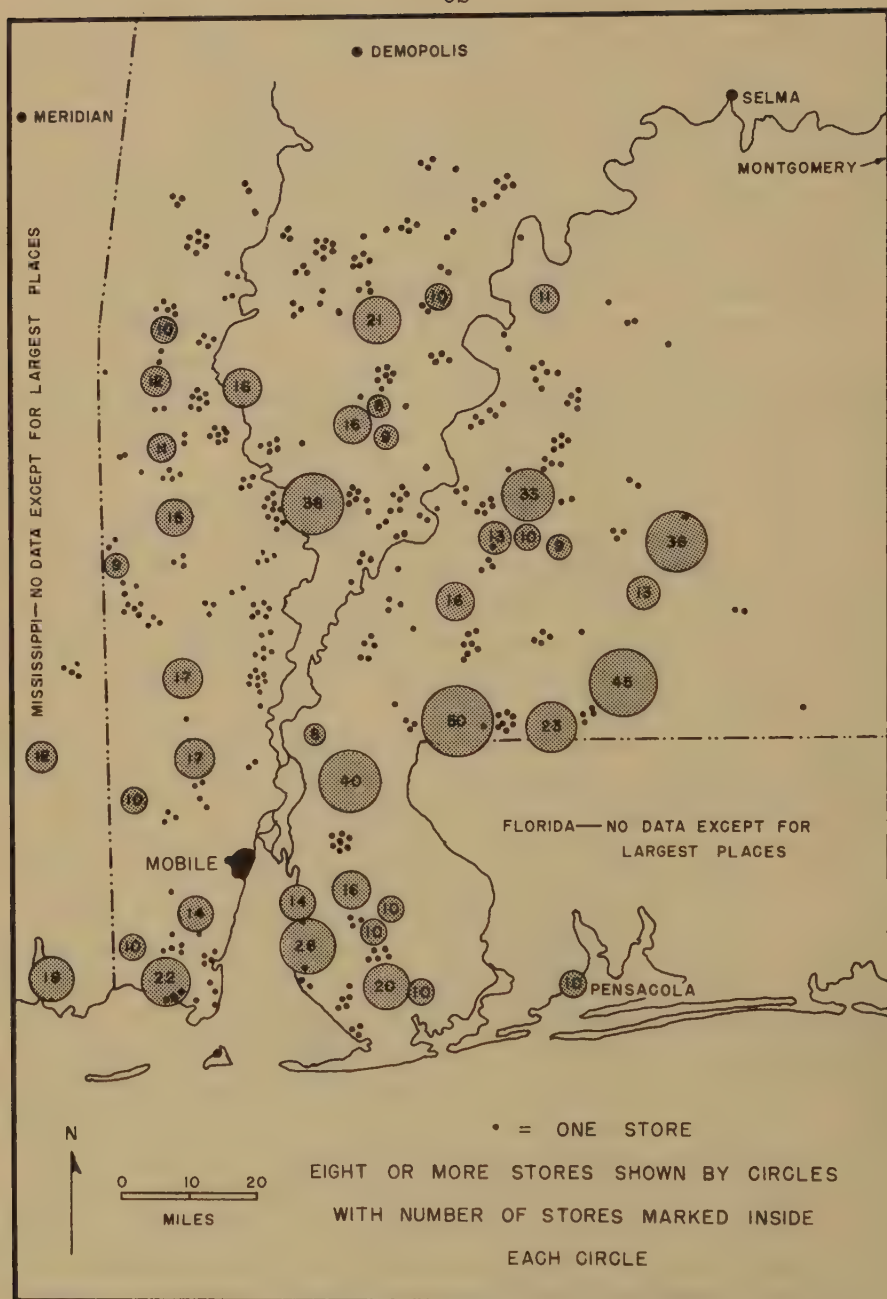


Fig. 9.--Distribution of out-of-town stores served by Mobile wholesale firms, 1939. Stores shown are those with three or more credit experiences with Mobile wholesalers. (Source: Mobile Retail Credit Men's Association.)

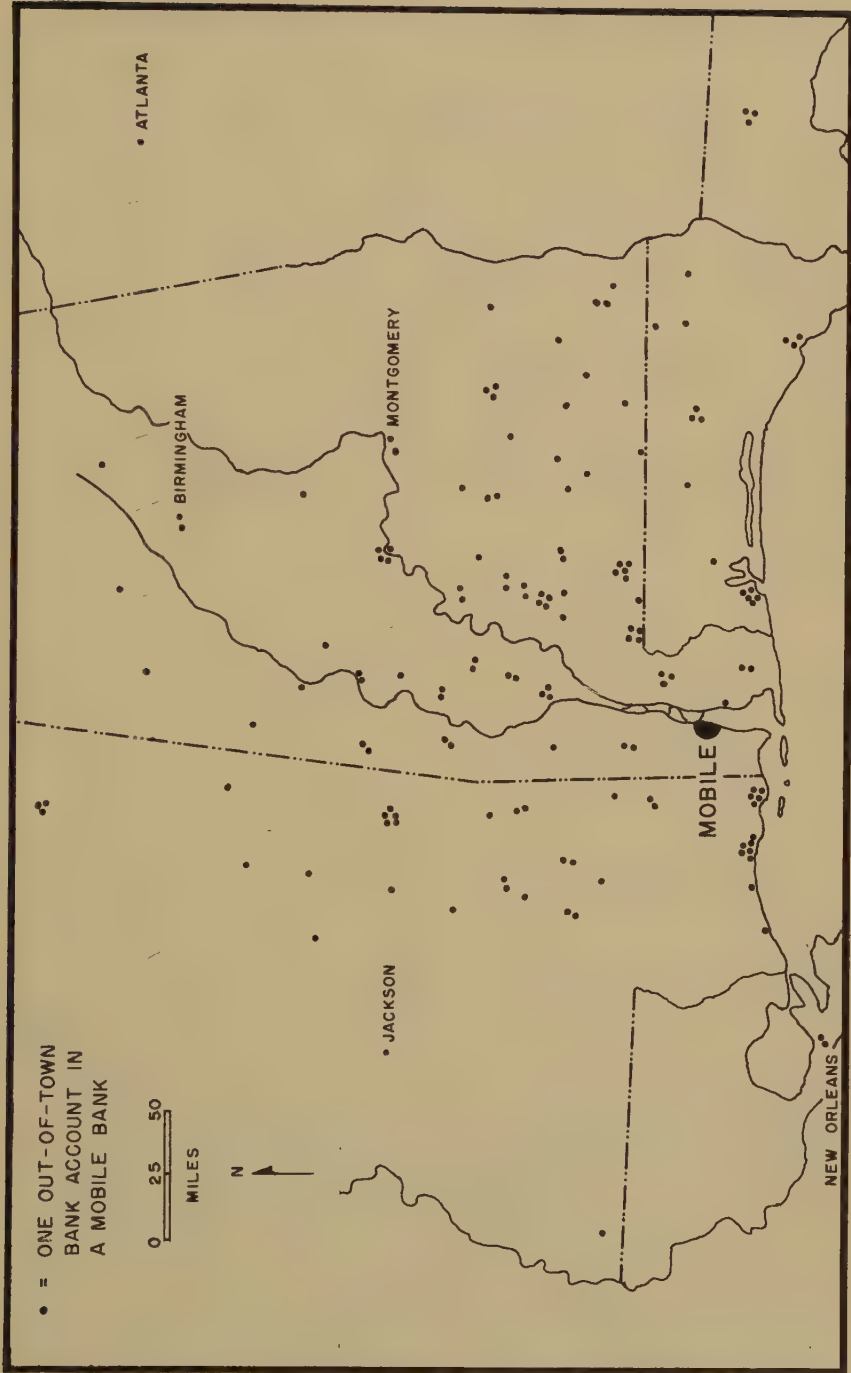


Fig. 10.--Distribution of banks having deposits in Mobile banks, 1940. Shown on this map are 95.1 per cent of the out-of-town accounts. Remainder of accounts are outside area covered by this map. (Sources: First National Bank, Merchants National Bank, and American National Bank, Mobile.)

pally from large cities rather than from small centers as in wholesale grocery distribution.

Mobile and Its Primary Port Hinterland

Although the area in which Mobile is dominant in most of its urban functions is the coastal plain just discussed, Mobile also has strong connections with and secures much of its support from a larger area. This larger region covers most of Alabama and easternmost Mississippi (Fig. 1). This region, for the most part, does not have sharp boundaries; generally the greater the distance from Mobile the weaker is the connection with the city. Nevertheless, it is a definite tributary area, tied to Mobile because it is the primary hinterland of the port. The heart of the area is the Mobile Basin--the territory drained by the Mobile River and its tributaries, chief of which are the Alabama and Tombigbee Rivers.

Factors Tying the Alabama-Eastern Mississippi Area to Mobile

Through the years three factors have combined to tie the Alabama-Eastern Mississippi area to Mobile. They are: (1) the focussing of the Alabama-Tombigbee River system on Mobile, (2) the fact that Mobile is the only sea port in the state of Alabama, and, (3) the rail connection provided by the Mobile and Ohio and other rail lines between eastern Mississippi and Mobile.

The Alabama-Tombigbee River system.--Historically the most important bond has been the Alabama-Tombigbee River system. As has been pointed out, the introduction of the steamboat over a century ago provided cheap water transportation to Mobile from much of the areas drained by these rivers. With the decline of river traffic, the rail lines serving the area still focussed on Mobile to some extent, and, although Mobile's monopoly of transportation was broken, the rails still served as a bond between the port and the Mobile Basin. Mobile has always been interested in improving the rivers in order to secure cheap transportation to the interior. The improvement of the Black Warrior River, in recent years, providing barge navigation almost to Birmingham, has partially offset the loss of traffic on the main rivers, the Alabama and Tombigbee.

A project in which Mobile is now interested is the construction of a barge canal from the upper Tombigbee to the Tennessee River. Such a canal Mobile feels would not only provide a short water route to the important Tennessee Valley, 630 miles shorter to the Gulf than the present one, but would also tap the whole Mississippi-Ohio River system, shortening the distance to the Gulf by over 100 miles. Mobile thus would obtain cheap water transportation to the interior to compete with New Orleans. A further benefit would be provided by easier upstream navigation in the slow flowing Tombigbee as contrasted with the swift Mississippi current. Army engineers investigated the project and recommended its construction.¹ Other interests opposed the project, pointing out that water transportation was already available on the Tennessee and Mississippi, that ample rail facilities existed, and that the engineers' estimate of potential traffic was too high. According to the opponents of the measure not enough traffic would move to justify the \$65,000,000 estimated first cost of the project.²

Another improvement project involves provision of nine feet of water in the Alabama-Coosa Rivers as far as Rome, Georgia, about 600 miles upstream. In 1934, the Corps of Engineers thought that the \$34,000,000 required for this navigation-electricity-generating project would not be justified. Subsequent investigation by agencies of the State of Alabama led to the claim that the project was justified because of the recent growth of the port and industries at Mobile, the growth of the industrial cities of Gadsden and Rome, and the decreasing cost of truck and water

¹U. S. Congress, House, Waterway Connecting the Tombigbee and Tennessee Rivers, House Doc. No. 269, 76th Cong., 1st Sess. (Washington: Government Printing Office, 1939), p. 110.

²Hearings before a Subcommittee on Commerce, U. S. Senate, First Session on H.R. 6264 (Washington: Government Printing Office, 1939), and Waterway Connecting the Tombigbee and Tennessee Rivers, Alabama and Mississippi, Hearings before the Committee on Rivers and Harbors, House of Representatives, 77th Cong., 1st Sess. (Washington: Government Printing Office, 1941).

Proposals for a canal between the Tombigbee and Tennessee Rivers had been made for years before the recent debates; the first proposal apparently was made by Governor Gayle in 1834, who argued that it would benefit Tennessee Valley planters and the port of Mobile and keep Alabama trade in the state. (W. E. Martin, "Internal Improvements in Alabama," Johns Hopkins University Studies in Historical and Political Science, Ser. 20, No. 3 [April, 1902], p. 35.)

transportation.¹ At present there is only a four foot, little used channel as far as Wetumpka, eleven miles above Montgomery, about 375 river miles above Mobile.

In the past, the rivers focussing on Mobile gave the city its start. Today they are relatively less important, but nevertheless carry considerable freight, particularly from the Birmingham area to Mobile, give the city cheap transportation to important producing centers, and serve as a partial check to higher rail rates. If the waterway system is improved, either through connection with the Tennessee River or improvement of the Coosa, many people believe that Mobile will be aided in extending its primary port hinterland. The case is not clear, however, since improvements in transportation facilities are notoriously easier to visualize than increases in water-borne traffic.

The state of Alabama.--A second factor strengthening Mobile's hold on its hinterland is the fact that Mobile is the only port for the state of Alabama, and by virtue of this fact receives much state support. Since the state area coincides approximately with the Alabama-Tombigbee River system, this political backing reinforces Mobile's connections with the river basin.

The most important result of state support has been the construction, at state expense, of the \$12,000,000 Alabama State Docks. The new docks supplemented the old deteriorating facilities and aided materially in checking a decline in the port. Private capital was unwilling to take the chance of investing so much money in such an enterprise. Likewise it would have been difficult for Pensacola, Mobile's near neighbor and potential competitor for much of Alabama's trade, to acquire such docks, since Pensacola is only one of several Florida ports and thus must compete with other ports for state appropriations. Not only did the state build the docks at Mobile but it also runs them and does everything in its power to secure business for the port and the docks. It is difficult to estimate how much influence the state has on shippers. State loyalties probably are stronger in the South than in the North and in so far as this is true in Alabama Mobile may profit.

¹U. S. National Resources Committee, Drainage Basin Committee Report for the Southeastern Basins (Washington: Government Printing Office, 1937), p. 29.

A second possible means of giving Mobile business is through the use of the state power to prescribe intrastate rail and truck rates. Since Mobile is Alabama's only port it alone benefits from lower intrastate rates on port traffic. As an example, New Orleans recently secured a reduction in gasoline and oil rail rates to Tennessee Valley points to meet potential barge competition up the Mississippi and Tennessee Rivers. Since Mobile did not have direct water connections with the Tennessee Valley, the low rate did not apply to Mobile and the city stood to lose some of the port traffic it had controlled. The Alabama Public Service Commission, taking cognizance of protests from Mobile, held a hearing on the question and as a result ordered Alabama intrastate rates lowered within thirty days so that Mobile would not be discriminated against.¹ The issue was settled, before the Alabama rates went into effect, by the Interstate Commerce Commission changing the rates so that Mobile retained the same relative position it had enjoyed previously. The point is that the state of Alabama stood ready to guarantee Mobile a parity through its power over intrastate rates. In the past the threat of such action has often insured Mobile favorable rail rates to the interior of the state.

Not only does the state have power over intrastate rail rates, but it also has power over truck rates. The state control of truck rates, or rather lack of Interstate Commerce Commission control on intrastate truck rates, favors Mobile in the trucking field more than in the rail, inasmuch as intrastate truck rates are not related to a nation-wide rate basis as definitely as are rail rates. As a result, one Mobile truck traffic expert stated that as far as Mobile was concerned the whole state of Alabama was Mobile territory, since truck rates to Mobile were generally less than to any other port, regardless of distance.² There are some minor exceptions to the statement but in the main it is true.³ In addition fees and minor weight and license restrictions

¹Alabama Public Service Commission vs. The Alabama Great Southern Railway Company et al., Docket 7638, submitted May 24, 1940, decided June 15, 1940 (Montgomery, Alabama: Public Service Commission, 1940).

²Interview with David Knapp, Jr., President Mobile Traffic Association.

³For example, some wholesale groceries move from Panama

on trucks moving from one state to another discourage some interstate trucking.

The Gulf, Mobile, and Ohio rail lines in eastern Mississippi.--Most of southeastern Mississippi, although largely outside the Alabama-Tombigbee Basin, nevertheless is part of Mobile's primary hinterland. Not only is Mobile the closest port to much of eastern Mississippi, but more important, Mobile has long been securely connected with this Mississippi area by the Mobile and Ohio Railroad, the first important railroad in the Deep South. In this connection it will be remembered that the completion of the Mobile and Ohio Railroad almost to the Ohio in 1860 stimulated cotton cultivation in eastern Mississippi and thus provided much cotton for export from Mobile. The well established route of trade created by the railroad has had the effect of tying this eastern Mississippi area to Mobile, although New Orleans secures much of the business from northeastern Mississippi today. Another bond tying eastern Mississippi to Mobile was provided after 1890 by the construction of the Gulf, Mobile, and Northern Railroad parallel and a few miles west of the Mobile and Ohio. In 1940, this line was combined with the Mobile and Ohio to form the Gulf, Mobile, and Ohio Railroad.

Extent and Character of the Primary Hinterland of the Port

The primary hinterland of the port of Mobile is fairly well delimited by the generalized rate map (Fig. 18) as well as by Figure 1. The area in which Mobile enjoys the cheapest rail freight rates includes most of the Alabama-Tombigbee Basin, most of the state of Alabama, and most of easternmost Mississippi. Part of the Tennessee Valley area of Alabama, a long distance from Mobile, is not in the preferential rate area. Instead it is indicated as parity territory, in this case with New Orleans and Pensacola. Similarly, the southeastern part of Alabama is indicated as parity territory for rate purposes with Pensacola. Here, however, unlike the Tennessee Valley area, Mobile secures most of the business since smaller Pensacola is not a serious competitor.

City, Florida, to Dothan, in southeastern Alabama. On the other hand peanuts are trucked from Dothan to Mobile for water shipment, even though the road distance is twice as long as to Panama City.

Furthermore, as has been shown, Mobile enjoys intrastate truck rates to this nearby area in Alabama. The Tennessee Valley of Alabama has intrastate truck rates also, but the distance to Mobile (over 300 miles) puts it outside economical volume trucking radius, although small lots of some commodities move at rates lower than rail rates.¹ Almost all of Alabama, therefore, is part of Mobile's primary hinterland, with the exception of some extreme northern portions. This primary territory supplies Mobile with more than three quarters of its port business and is surrounded by competitive territory from which Mobile secures some traffic.²

From a production standpoint the area in which the port of Mobile is dominant can be divided into three main regions, the lumber producing lower coastal plain, the cotton growing interior, and the mining-industrial district around Birmingham. Lumber, cotton, and iron and steel products are the three leading exports of Mobile. The forests of the coastal plain have already been discussed. There remain, therefore, the cotton region, exemplified historically best by the Black Belt, and the iron and steel district of Birmingham.

Cotton areas and the Black Belt.--In ante-bellum days, as has been shown, cotton was the mainstay of Mobile. In recent years, however, it has only been third in importance, ranking behind lumber and iron and steel. With the exception of the lower coastal plain along the Gulf and the Appalachian Mountain section of the northeast, most of the primary hinterland of Mobile produces cotton in some quantity.

The center of cotton production in the past was the Black Belt, so-called because of its fertile black prairie soils developed on residual limestone. This crescentic region occupies the inner coastal plain just below the fall line of the rivers flowing to Mobile. As a result it was connected with the port by river transportation at an early date. For a long time Mobile was the metropolis for the Black Belt, and in turn the city

¹H. F. Otte, Industrial Opportunity in the Tennessee Valley of Northwestern Alabama (New York: Columbia University Press, 1940), p. 115.

²This point is discussed at length in chap. vi, with tonnage figures in Table 7.

received most of its support from that area. Since the decline of cotton production in the Black Belt starting in the latter nineteenth century, due to impoverishment of the soil and the opening up of competing areas, as well as the introduction of railways which carried the crop to other places, the Black Belt has not been as important to Mobile as it was formerly.

Cotton comes from the whole region tributary to Mobile, particularly from eastern Mississippi, but there are few places where production is very great. The center of heavy cotton growing for export has moved west to Texas, just as it moved from the Carolinas to Alabama a century ago. More important than the relative decline in production is the fact that much of the cotton of the area is consumed locally, or shipped overland to nearby southern mills. Not more than a quarter of Alabama's cotton, for example, is shipped out through Mobile.

Iron and steel and the Birmingham district.--The Birmingham district has taken the place of the Black Belt as the major single source of trade for the port of Mobile. The interconnection of Birmingham and Mobile however is not as mutually exclusive as was that with the Black Belt a century ago when there was no network of rail lines to move traffic in many directions. Nevertheless, Mobile is the major port of the Birmingham district, and its proximity to the district produces a definite liaison between the two cities. In addition to having barge line connections with Birmingham, Mobile is the nearest port to Birmingham, and since rail rates to ports are approximately on a mileage basis for distances under 400 miles, Mobile has a lower rate to Birmingham than any other major port and consequently gets most of the traffic. The short line distance to Mobile is only 266 miles, as compared to 354 miles to New Orleans.

Not only do the iron and steel products of Birmingham constitute one of the three big items in Mobile's maritime trade, but the Birmingham district also is responsible for the movement of other commodities through Mobile, such as bunker and export coal and manganese ore imports. Altogether the district accounts for about a quarter of the port's tonnage.¹ Birmingham, with a popu-

¹Estimated from commodity statistics for the port of Mobile reported in "Commercial Statistics, Waterborne Commerce of Mobile, Alabama, District," compiled in the office of the District Engineer (Mobile, Alabama: U. S. Army Engineers, 1940). (Mimeographed.) See chap. vi, Table 7, for more detailed treatment.

lation of almost 300,000 is one of the large urban centers of the interior South, ranking with Atlanta, Memphis, and Dallas. Moreover, because of the heavy industry in Birmingham (6 per cent of the blast furnace and 3 per cent of the steel capacity of the U. S.), it is the major traffic producing center of the South. The attachment of this center to Mobile gives Mobile a dependable backlog of traffic and is one of the port's most jealously guarded advantages. Growth or development in the Birmingham area is therefore closely watched and felt in Mobile.

Mobile and the South and Middle West

Mobile and the South

Mobile is a gateway to the South. Like other Gulf and Atlantic ports it is outside the Cotton Belt, just as are the northern gateways of St. Louis, Louisville, and Cincinnati or the old southern border metropolis of Baltimore, and Washington and Richmond, the rail funnels to the northeast. None of these cities serves the whole South uniformly; rather, each concentrates on its neighboring territory. In a few specialties, however, the larger centers serve extensive reaches of the South. This is especially true of St. Louis, Cincinnati, Baltimore, and New Orleans. In this larger competition Mobile is a more active entrant than most of the ports of the South but is not in the class of the great cities just mentioned. Mobile's population of approximately 100,000 may be taken as a somewhat inflated index of the relative position of Mobile in this competition with the major gateway cities, gateways which range in size from 300,000 to 800,000. A more apt description might be to characterize Mobile's participation in this semi-national trade as potential in many cases rather than actual. Machinery, in the form of rail rates and facilities, is available for Mobile's participation but is used only for isolated commodity shipments, limited mainly to those which Mobile transport agencies have been successful in soliciting.

The northern gateways function primarily as import centers for the South and secondarily as distributing points for southern goods. Since they are on the southern margin of the industrial northeast and the agricultural Middle West, they collect manufactured goods from the industrial centers and grain and meat from the fertile farm lands to distribute throughout the South.

Traditionally, the South has been lacking in manufactures and foodstuffs and has imported them from the North. Today the South is more self sufficient, and particularly has developed its own interior trade centers, as witness the rapid growth of the central cities of Atlanta, Memphis, and Dallas. This growth of the interior centers is a continuation of the process observed in Alabama in the nineteenth century when Mobile lost trade to the new interior cities of the Black Belt. The gateway cities, however, still retain some of their traditional trade.

St. Louis, the terminus of the three major rail systems of the central-southwest, is the main gateway to the Ozarks and the Southwest, and likewise has good connections with the Gulf South. Louisville, the home of the Louisville and Nashville Railway, is important in the trade of Kentucky, Tennessee, and Alabama. Cincinnati, the northern terminus of the two most important trunk lines of the central Southeast, the Louisville and Nashville and the Cincinnati, New Orleans, and Texas Pacific (part of the Southern System) is the metropolitan gateway for much of Kentucky, Tennessee, and other sections of the South. Traditionally, Cincinnati (the "Porkopolis" of America) fed the South with pork, wheat, and corn. Today it still handles many foodstuffs but also has a large trade in coal from Kentucky and West Virginia, as well as extensive wholesale trade throughout the South. Baltimore formerly played a leading role in the commercial and industrial development of the southeast from Virginia to South Carolina inclusive and still has much trade with that area. Richmond and Washington are foci of the all important seaboard railways which serve Virginia and the Carolinas.¹

With the exception of New Orleans the southern ports and especially Mobile are much less important commercially as gateways than the northern centers. Primarily this is because the flow of trade is mainly from South to North, away from the coast. In heavy outgoing goods produced near the seacoast, however, such as lumber, petroleum, and, to some extent, cotton, the southern port cities are important. The same is true of heavy imports,

¹For evidence of the intimate connections between Louisville, Cincinnati, Baltimore, and Richmond with the South see: Location of Reserve Districts in the United States, Senate Doc. 485, 63d Cong., 2d Sess. (Washington: Government Printing Office, 1914).

such as petroleum, ores, fertilizers, and of Caribbean products, principally bananas. By and large Mobile and the other smaller ports are much more important as export than as import centers, since either large interior cities, located between the source and the market, or very large ports, perform the function of breaking down imports into small lots for widespread distribution. Small or medium sized ports in relatively new sections or in districts producing raw materials are characteristically export ports. Thus all the ports of the United States, except the large general ports of New York, New Orleans, and San Francisco are primarily export ports.¹ New Orleans, because of its age, large size, and established position, is the one southern port with a large general trade over a large territory. This one exception, however, does not destroy the rule that trade moves mostly northward in the South.

The other southern ports fill local needs and, because of the distant interior location of many important southern resources, do not even handle all the outgoing heavy products of the South. Thus Hampton Roads (Norfolk) is an all important coal shipping point, but so also is Cincinnati, even closer to the coal fields of West Virginia and Kentucky. Charleston and Savannah move relatively little cotton now because most of the Carolina cotton is utilized in the Piedmont or moved by all rail routes to the north. Jacksonville serves as a gateway to Florida, partly because there is no good harbor on the coast to the south. More important, however, is the junction at Jacksonville of most of the railroads entering Florida. Jacksonville is the middle of an hour glass with the rest of eastern United States on one side, and Florida on the other; thus although it lies in the far south, it is a gateway from the North, just as is Cincinnati or Washington. The Houston-Galveston port center is the most important shipper of cotton today, because it serves the productive Texas cotton fields from which a large percentage of the crop still moves by water. Wheat from the plains is also shipped out in volume; however, petroleum, which is abundant near Houston and Galveston as well as in many other parts of Texas, is far and away the heaviest

¹An exception is provided by the ports of old importing regions where the role is exactly reversed (New England is virtually the only example in the U. S.).

traffic movement. Altogether, Houston-Galveston ranks as the big port center of the South in tonnage, because of the enormous movement of oil, and because it serves productive territory remote from market. New Orleans, however, remains as the one large general port with large import as well as export trade and has the greatest total value of port commerce. The remaining ports are all small by comparison, Mobile being near the top of the small volume group with about a quarter of the trade of New Orleans. The details of its port traffic will be treated in Chapter VI.

Mobile and the Middle West

Mobile in common with all the ports of the South (with the possible exception of New Orleans) is primarily a semi-local port. Roughly speaking, ports may be divided into three classes: (1) strictly local, such as Wilmington, North Carolina, and Panama City, Florida, (2) semi-local, or nearby-regional ports, such as Charleston, Savannah, Jacksonville, and Mobile, and (3) sectional and national, as New York, Baltimore, New Orleans, and San Francisco. Even for the large ports, the local, regional territory is very important; likewise, most of the small ports do some large sectional, or semi-national business. Mobile, as we have seen, secures approximately three quarters of its trade from semi-local or nearby regional territory. However, Mobile is in a position, because of parity rail rates, to compete with many ports for the trade of a large area of the interior South as well as of the Middle West, west of a line from Cincinnati to Chicago.

Mobile is the closest ocean port to a large section of the Middle West. It is the nearest ocean port to St. Louis, Louisville, and points in between.¹ The short line rail distance from St. Louis to Mobile is 648 miles (via Mobile and Ohio); from St. Louis to New Orleans is 709 miles (via Illinois Central). The short line rail mileage from Louisville to Mobile is 658 miles;² from Louisville to Baltimore, the nearest Atlantic port, is 686

¹Distances computed from mileages via shortest route combinations in time tables of The Official Guide of the Railways and Steam Navigation Lines of the United States, Porto Rico, Canada, Mexico, and Cuba (New York: National Railway Publication Co., October, 1940).

²L. and N. to Birmingham, Southern Birmingham to Mobile.

miles.¹ Mobile is also the closest Gulf port to Chicago, only 858 miles away,² while New Orleans is 921 miles.³ Baltimore, however, is only 796 miles from Chicago.⁴

Mobile's position near the center of the northern arc of the Gulf of Mexico, plus its location 30 miles north of the Gulf, at the head of Mobile Bay, makes it naturally the nearest ocean or Gulf point to a considerable section of interior America. Charleston and Savannah, on the southern coastal indentation of the Atlantic have about the same air line distances to much of the Middle West, but, because of devious rail routes winding across the Appalachians, the rail distances are greater; for example, it is 699 miles by the most direct rail route from Louisville to Charleston,⁵ longer than to either Mobile or even Baltimore, the nearest north Atlantic port. In addition to longer rail distances to south Atlantic ports, the rail connections are poor and slow because of extensive switching and use of branch lines, in contrast to the direct, main line hauls to New Orleans, Mobile, or North Atlantic ports. Mobile's naturally close location to the heart of America is therefore further improved by the relative excellence of its rail connections, primarily the main lines of the Louisville and Nashville, and the Gulf, Mobile and Ohio railroads. The recent creation of the latter line promises fast schedules to compete with the Illinois Central from St. Louis to New Orleans. Already (1941) the passenger schedule from Mobile to St. Louis has been cut three hours, almost as fast as the fastest Illinois Central time from St. Louis to New Orleans.

The actual competitive position of Mobile is best shown by the rate map, Figure 18. Although Mobile is slightly nearer to much of the Middle West than other ports, the distance is not great enough to give Mobile a lower rate outside its immediate territory. In the distant interior Mobile has the same rate as New Orleans. East of the Cincinnati-Chicago line, North Atlantic

¹L. and N. to Cincinnati; B. and O., Cincinnati to Baltimore.

²M. and O., Mobile to Cairo; I. C., Cairo to Chicago.

³Via Illinois Central. ⁴Via B. and O. or Pennsylvania.

⁵L. and N., Louisville to Knoxville; Southern, Knoxville to Charleston.

ports have preferential rates. In practice, the North Atlantic ports secure traffic from west of this line (bounded by the B. and O. from Cincinnati to Indianapolis, and the Monon to Chicago), because more freight moves to and from Europe than to Caribbean destinations and, although ocean rates are substantially on a parity, the direct haul saves time. Even more important, the services to Europe are better and more frequent from the North Atlantic than from the Gulf. The established trade routes run from West to East, rather than from North to South. To divert some of this trade is the problem of the Gulf ports.

Competition of New Orleans and the Mississippi Waterway System

As far as the port of Mobile is concerned its major problem is the competition of New Orleans. New Orleans, a city of half a million, is an old port with well-established trade connections to the interior. For this reason sailings are much more frequent and thus New Orleans is a more convenient port for shippers. In addition, New Orleans lies at the mouth of the great Mississippi River system. This strategic position was responsible for New Orleans' early growth and made New Orleans the third largest (almost the second largest) city in the United States in 1840. For the past half century the river has played a minor role in comparison with the railroads. Today, however, barge traffic on the improved Mississippi and its tributaries is increasing, and again New Orleans has an advantage over most other ports in the United States. Barge rates are 20 per cent less than rail rates, and, in addition, joint water and rail rates are available. The railroads still move most of the traffic, but the river is again a strong threat, and tends to make the railroads give cheaper and better service to New Orleans than to other ports.¹

¹For example, note the proposal for lower rail rates on gasoline from Tennessee Valley points to New Orleans, discussed earlier in this Chapter (p. 67). Still another rate revision illustrates the point. The railroads have established trainload rates on molasses between New Orleans and Peoria to compete with potential barge traffic. Since New Orleans is the only large port on the Gulf, it is the only port importing enough molasses to benefit from a trainload rate. Thus New Orleans' large size enables it to grow even larger.

Still another advantage New Orleans possesses is the Illinois Central Railroad providing direct, main line service to

Thus is seen again the operation of the factor which gave New Orleans its early supremacy and relegated Mobile to second place on the eastern Gulf. Mobile at the mouth of the second largest river system on the Gulf is the second largest city of the eastern Gulf. However, the position and prospects of Mobile are not conditioned entirely by this one factor of location. Mobile has the means, actual and potential, for improving its position so that it can become large enough to compete effectively with New Orleans. Railroads in their own right are still the most important means of transport and can remain as effective aids to the growth of Mobile. The use of the resources of Mobile's hinterland--the forests of the coastal plain and the iron and steel manufactures of the Birmingham district--is being vigorously expanded to the benefit of Mobile. Finally there is the possibility of applying political pressure for extension of Alabama's improved waterways northward to enable them to compete with the Mississippi, just as the port facilities of Mobile have been improved.

Chicago and other Middle-Western points. In 1940 for example package cars moved from Chicago to New Orleans in two days but took three days to Mobile (Chicago Association of Commerce, Progress in Chicago Industrial Area, Vol. I, No. 5, April, 1940).

CHAPTER V

MAJOR FUNCTIONS AND THEIR LOCALIZATION IN THE CITY

What are the major activities in Mobile today and where are they performed? The answer to this question gives a picture of Mobile and establishes the character of the city in comparison with other urban centers. A variety of quantitative measures can be used but reliance will be placed primarily on two: the actual number of employees in each major activity and the areal extent of these functions in the urban area. Employment figures are derived largely from census returns, land use is mapped from field observation.

Occupational Structure of Mobile Population

Employment figures are the best single statistical measure of the relative importance of a given activity to a city. Payroll figures would be more significant to many groups such as local merchants; likewise some groups would prefer to use value of products manufactured or sold, or value added by manufacture. For our purposes however, since we are primarily interested in the urban population as a whole, occupational figures are the best indicators. Furthermore, only such figures are available in any degree of completeness, and only such figures give a uniform measure for all activities, whether for manufacturing, trade or the professions. Supplementary statistics other than those for occupations, however, will be used, where available.

Table 1 shows the number and percentage engaged in various occupations for Mobile and some other southern cities of comparable size. Figures for Mobile, and for Mobile and Prichard combined, are shown. Since Mobile has such a large proportion of its population outside the city limits, figures for the incorporated city alone do not cover enough of the metropolitan area to enable reliable comparisons to be made with other cities. If occupational statistics for Prichard are added to the Mobile city

TABLE 1

NUMBER AND PER CENT OF TOTAL ENGAGED IN MAJOR OCCUPATIONS
FOR MOBILE AND SELECTED SOUTHERN CITIES^a

Occupation	Mobile		Mobile and Prichard		Percentage of Total Gainfully Occupied				
	Num-ber	Per Cent	Num-ber	Per Cent	Tam-pa	Mont-gom-ery	Jack-son-ville	Jack-son-Miss.	Mi-ami
Manufacturing and mechanical	7,794	25	8,585	26	42	24	22	25	24
Transportation and communication.....	4,810	15	5,030	15	8	10	13	9	8
Trade.....	4,894	16	5,154	15	15	17	18	19	21
Domestic and personal.....	7,250	24	7,741	23	19	26	25	23	24
Clerical.....	3,256	10	3,276	10	7	12	11	11	8
Professional...	1,965	6	2,031	6	6	7	7	9	8
Public service (not elsewhere classified)...	826	3	855	3	2	2	2	2	2
Other (agriculture, forestry, fishing and mining)...	283	1	423	1	1	2	1	2	4

^aComputed from: Fifteenth Census of the United States: Census of Occupations (Washington: Government Printing Office, 1931).

total, a fairer basis of comparison results.¹

¹The 7,000 population of Prichard in 1930 added to the incorporated city population of 68,000 gives a total of 75,000, a greater percentage of 93,000, the total metropolitan population, than mere incorporated city figures would be. Furthermore, the addition of Prichard adds to the Mobile figures the largest of the industrial suburbs and makes the figures more representative for Mobile as a whole, since much of the city's industrial population lives outside Mobile proper. The fact that figures are not available for all of metropolitan Mobile does not detract much from the validity of the percentages presented, since other southern cities also have suburbs, and the addition of Prichard brings the Mobile figures close to those for other cities with their less numerous, but nevertheless existent suburban appendages. Even to secure occupational statistics for Prichard alone, the only incorporated

From Table 1 it can be seen that manufacturing and mechanical pursuits support the largest number of workers in Mobile. This is true for most cities in America,¹ and likewise is true for the other southern cities shown in Table 1.² The fact that over a quarter of Mobile's gainfully occupied work in manufacturing and mechanical activities, therefore does not indicate that Mobile is an industrial city, because carpenters, plumbers, electricians, mechanics, and many other service trades are listed under the heading. Non-industrial cities, such as Montgomery and Jackson, rank almost as high as Mobile in this category.

If all the known service type industrial occupations are removed from Mobile and Montgomery figures, such as printers, plumbers, most of the carpenters, and building trades, Mobile still does not vary much from Montgomery. Corrected figures show Mobile and Prichard with 6,072 primary industrial workers or 18 per cent of the total gainfully occupied and Montgomery with 4,763 or 14 per cent. This lack of difference reflects two conditions: (1) the impossibility of knowing just how many service and primary employees there are (thus one can remove only the obvious classes), and (2) the fact that the figures are for 1930, before Mobile had entered upon its full industrial growth. Later figures reveal more differences between the cities.

Domestic and personal service account for 23 per cent of Mobile's workers, and form the second largest occupational group. This is common for most cities, especially southern cities, as Table 1 indicates.³

In trade, mainly retail and wholesale, Mobile with 15 per cent has a slightly lower percentage than the service cities,

suburb of Mobile, was difficult, since the figures are not published and had to be obtained from unpublished data in the census bureau files in Washington.

The writer is grateful to the census bureau, especially to Dr. Malcolm J. Proudfoot, Administrative Assistant to the Director, for furnishing a special tabulation of Prichard figures.

¹Cf. Harris, Salt Lake City, p. 5.

²Tampa has such a large percentage in manufacturing because at least 15 per cent of the gainfully employed work in cigar factories, which in 1929 still employed much hand labor.

³Salt Lake City, with a tradition for few household servants, has only 12 per cent in this category, but is highly unusual (Ibid.).

with large productive rural hinterlands, such as Jackson and Jacksonville, or Miami with its large tourist trade.

In transportation only does Mobile with 15 per cent have a relatively larger percentage than most other cities in America. If a large proportion of the mechanical and clerical workers in Mobile are added to the transportation figures, as they should be since extensive yards and docks, as well as the main offices of two railways and one major shipping line are in the city, the corrected figure for transportation in Mobile would equal at least 20 per cent of the gainfully employed. Thus transportation is slightly more important in Mobile's occupational structure than primary manufacturing, and emerges as the most important primary support.

In the remaining occupational categories, Mobile has normal percentages as compared with the cities of Table 1 and with many other cities.

Comparisons between Mobile and Montgomery based on other figures give a better clue to Mobile's character than the gross over-all occupational statistics of Table 1. Figures comparing Mobile and Montgomery counties are revealing, although land outside the urban area is included in the comparison. However, since 114,906 out of 141,974 total population of Mobile County lived in the metropolitan area in 1940, and 93,697 out of 114,420 county population lived in the Montgomery metropolitan area, the distortion is not so great as to preclude some general conclusions. The figures were gathered from employers and represent the actual numbers employed in manufacturing, retailing, and the like, regardless of the trade of the individual worker. Figures in Table 1 on the other hand indicate the trade of the individual worker interviewed by the census enumerator. However, the figures in Table 2 still have drawbacks, since many service industries, such as printing, are included under manufacturing, and useful transportation statistics are not available.

According to Table 2, about 46 per cent of the workers in Mobile County were employed in manufacturing and only about 35 per cent in Montgomery County in 1935. In retail trade, on the other hand, only about 23 per cent of Mobile County workers were employed in contrast to 35 per cent in Montgomery County. In other figures available there is no significant difference between the two cities except in the hotel category. Here Mobile has only a

third the number of employees that Montgomery has, even though Mobile is larger. The large number of hotel employees in Montgomery reflects the presence of the state capital, the transient railway division point and terminus workers, and the general business handled in a service capital such as Montgomery, as contrasted with the heavier-industry city of Mobile.

TABLE 2

EMPLOYMENT IN MANUFACTURING, RETAIL TRADE AND HOTELS
FOR MOBILE AND MONTGOMERY COUNTIES, 1935^a

	Total Number Employees	Manufac- turing		Retail		Hotels	
		Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
Mobile County..	17,361	7,916	46	4,076	23	206	1
Montgomery County.....	9,986	3,535	35	3,473	35	623	6

^aCensus of Business: 1935. Personnel and Payroll in Industry and Business, and Farm Personnel, by Counties (Washington: Bureau of the Census, June, 1937).

In the most recent years for which census figures are available, Mobile County emerges as a manufacturing center much more than Montgomery. In 1939, Mobile County had 8,819 industrial employees and Montgomery County 3,360.¹ Mobile County had 6.2 employed in manufacturing per 100 total population compared with 2.9 for Montgomery County. Mobile County thus had twice as many industrial workers per unit of population as Montgomery County. The effect of Mobile's industrial increase is evident.

Total retail trade figures for metropolitan areas show Mobile and Montgomery with equal percentages in 1939. The Mobile metropolitan district had 6,084 proprietors and employees engaged in retail trade and Montgomery metropolitan district had 5,291.²

¹Sixteenth Census of the United States: 1940. Census of Manufactures, 1939 [Preliminary Report, Alabama] (Washington: Bureau of the Census, April 27, 1941).

²Sixteenth Census of the United States: 1940. Retail Trade in the Metropolitan District of Mobile, Alabama, 1939

Greater Mobile thus had 5.3 per 100 total population engaged in retail trade, while greater Montgomery had 5.6. Mobile's lesser importance as a central place or shopping center for surrounding areas shows up sharply however when total sales for central place type stores are compared. In spite of Mobile's larger size (68,202 inhabitants in 1930 to 66,079 for Montgomery), Mobile had smaller sales in certain lines than Montgomery in 1935 as follows (Table 3):

TABLE 3

RETAIL AND WHOLESALE TRADE OF MOBILE AND MONTGOMERY, 1935

	Retail Sales in Thousands of Dollars ^a			Wholesale ^b	
	Apparel	Furniture, Household, Radio	Total	Sales in Thousands of Dollars	Number of Employee
Mobile.....	2,079	1,199	23,457	36,740	1,347
Mobile County....	2,112	1,113	27,566		
Montgomery.....	3,036	1,251	21,425	45,469	1,407
Montgomery County	3,036	1,251	22,373		

^aCensus of Business: 1935. Retail Distribution, Vol. III (Washington: Bureau of Census, 1936), p. 84.

^bCensus of Business: 1935. Wholesale Distribution, Vol. III (Washington: Bureau of Census, 1937).

If Mobile County and Montgomery County are compared the contrast is even more striking. The much greater population of Mobile County does not increase the sales in central place type of goods in proportion to the increase in population.

In wholesaling the same contrast can be noted. The contrast would be even greater if some types of wholesaling associated with the port of Mobile were taken out, such as bulk tank stations and brokers. The figures available do not permit this. Wholesaling, it should be stressed, is important in both cities;

(Washington: Bureau of the Census, September 2, 1941). Sixteenth Census of the United States: 1940. Retail Trade in the Metropolitan District of Montgomery, Alabama, 1939 (Washington: Bureau of the Census, September 5, 1941).

in Montgomery because it is a strategically situated central place and rail center surrounded by relatively productive land on all sides; in Mobile because it is a port moving over its wharves many commodities which take advantage of cheap water transportation for bulk movements.

Finally, if national rankings in population and in volume of retail trade are compared, Mobile's metropolitan area ranks 97th in the United States in population and only 119th in volume of retail trade. In few cities is the discrepancy greater. The only metropolitan areas comparable are: Savannah, Georgia (almost identical with Mobile), 95th in size, 114th in retail trade volume; Johnstown, Pennsylvania, 79th and 100th; Huntington, West Virginia and Ashland, Kentucky, 72d and 92d; Wheeling, West Virginia, 62d and 82d; Columbus, Georgia, 113th and 133d; Birmingham, Alabama, 29th and 42d; and Scranton and Wilkes-Barre, Pennsylvania, 19th and 30th. In total payroll Mobile's rank is just as low, although in number of retail employes and proprietors Mobile moves up nine places to 110th in the country. This reflects the lower wages paid in the south.¹

The figures cited are sufficient to give the general occupational status of Mobile in comparison with other cities. Mobile thus has a fairly well balanced occupational structure with primary emphasis on transportation and secondary emphasis on manufacturing, and relative lack of emphasis on retail and some service occupations. This employment structure mirrors the geographical situation of Mobile as follows: (1) Mobile is a strategically situated city and thus a focus of transportation routes and services which in turn attract industries taking advantage of good transport facilities and connections, and, (2) Mobile has a hinterland rich only in trees, a hinterland providing relatively few retail customers, but supplying the raw material for important forest products industries concentrated in Mobile, the transportation center of the region.

Localization of Functions

Every city has a more or less well defined pattern of land

¹Sixteenth Census of the United States. Cities of More than 25,000 Population Ranked by Volume of Retail Sales (Washington: Bureau of the Census, December 11, 1941).

use; as a rule the larger the city the more localization of functions or specialities there is, since the number of specialized functions is greater and the land area larger. Mobile is large enough to exhibit a considerable variety in localization of functions based on the type of land best suited for various activities. Likewise the pattern of land use in Mobile resembles the generalized land use pattern of many other cities, although each city has its own land-use pattern developed under a unique complex of time and place associations. Either the amount or value of land used for various occupations correlates in a general way with the importance of the functions carried on in the city as shown by occupation figures in the preceding section. The correlation, however, is never exact for reasons which will emerge as land use is examined in detail.

The general pattern of land use for Mobile is shown on Figure 4. On the eastern edge of the city, near the river, is the commercial core. Spreading out rather evenly on three sides are the residential and industrial-transportational districts, the former largely back from the river and in large measure west of the central business district, the latter mainly along the river, north and south of the business center, and in the northwest (Fig. 11). While there is a separation of residential and industrial functions as indicated, the separation is far from complete; in many places residences and industries are intermixed. The quantitative details of land use are shown by the maps (Figs. 11 and 12), the most important parts of this section. The text, therefore, directs attention merely to major items and suggests explanations for the more significant differences in the land-use pattern.

Commercial Land Use

In American cities as a rule commercial utilization represents the highest land values and hence has the most desirable location.¹ This location generally reflects in large terms the interplay of two factors: (1) centrality in the city, especially

¹This statement is only approximately true since the most desirable location varies with the function: thus the best location for a fine residence might be on top of a hill with a fine view.

in terms of actual intra-urban transportation connections, and, (2) the strong attraction of the first established business center and the trade connections developed there through the years.

In Mobile, as in many cities, the business district is off center for the urban area as a whole. The original business area was on the river bank in the center of the first settlement. As the city slowly grew in area it gradually expanded from its original nucleus and today is not in the geometrical center of the city. The built-up area of the city could expand only on the west side of the river, for the river itself blocked expansion on the east and also because land on the east side of the river was so low as to be undesirable (see Chapter III). In terms of actual transportation connections however the business district is not so poorly located today as lack of centrality alone would suggest, since transport routes naturally focus on the business core. Thus, even though Mobile has a rectangular grid pattern for its streets, the grids are pointed to the business district and do not follow compass directions (Fig. 11). Added to this powerful focussing effect were the street-car routes, built out from the business center to carry passengers into the business district. Although all of the street car services were discontinued in 1940, bus lines still follow many of the old routes. With the widespread use of the automobile, however, there is now more possibility of dispersion in the transport pattern than before. Formerly expensive rail rights of way could be afforded for only the most traveled channels, those leading to the business center.

In addition to the central business district which is the heart of the commercial core of Mobile, there are scattered business units throughout the city. The outlying business centers and large commercial enterprises are shown in black on the land use map for the city (Fig. 11). Every small store however is not shown--only the major enterprises, clusters or alignments which mark a significant break in the general residential pattern. On the whole, however, since Mobile is not a very large city these outlying business districts are of minor importance.

The two largest outlying alignments are Davis Avenue leading from the edge of the commercial core toward the northwest, and Broad Street extending southward from the westernmost edge of the central business district (Figs. 3 or 11). Davis Avenue is the

main business street for the largest Negro section of Mobile. Broad Street, as its name implies, is a wide thoroughfare carrying much traffic. Other commercial clusters serving as local shopping centers for outlying districts are found at: (1) the strategic "Five Points" where St. Stephens Road joins Springhill Avenue about a mile west and slightly north of the downtown area, (2) near the western end of Government Street to serve the western edge of the residential area, and (3) at Prichard, the largest suburb of Mobile. A few other small centers are indicated in Figure 11.

Retail areas.--Only in the commercial core are specialized business functions numerous. On the land use map for the commercial core (Fig. 12) the various types of land use are divided into categories to show segregation of selected functions. The black areas represent a variety of activities, such as drug stores and restaurants, and many specialized retail stores and service enterprises in which there are only a few units in each class, such as camera shops, liquor stores, paint stores, and all other retail and service enterprises not elsewhere classified. This solid black area therefore is found mostly in the center of town where commercial activities are most prominent. The heart of the Mobile business district is the three block stretch of Dauphin Street between Joachim and Royal Streets; the center of this stretch is the block along the south side of Bienville Square.

A breakdown of land use according to localized functions reveals the segregation tendencies common to large cities. Thus in Mobile, as elsewhere, the center of the business district attracts more clothing firms than any other type of store. Apparently high class clothing stores can afford to pay the highest land rents. Mobile's principal department store also is placed in this category since sale of clothing is its dominant activity.

Next nearest to the center of the business district are banks, other financial enterprises, and office buildings. The banks are close together and form a small financial district but since there are only three banks and few ground floor financial offices, the area is not comparable to Wall Street in New York, La Salle Street in Chicago, or Montgomery Street in San Francisco. In the same area are many offices in the upper floors of buildings. The principal office buildings (those over four stories high are shown in Fig. 12 by "dash line" boundaries) cluster close

to the financial area. Although very near the center of the business district, high office buildings in Mobile do not occupy the most valuable land. This probably is true of practically all large American cities, as the contrast between high value State Street in Chicago with skyscraper-lined, but less valuable, La Salle Street suggests.¹ Retail stores do not flourish on the upper floors of a skyscraper, since they need to attract the attention of heavy pedestrian traffic.

In Mobile there are a surprisingly large number of offices on the ground floor, partly because there are so few skyscrapers. The greatest concentration of these offices is near the north-eastern edge of the retail business district, principally on the block of St. Francis Street, between Royal and Water Streets. Real estate offices are most common, since they need to attract public attention more than most other offices.

The two types of retail business and service farthest out in the commercial core are furniture stores and automobile dealers and repairers. These two activities require large amounts of land and cannot afford to pay the high costs of the most central location. Furniture stores are sharply localized on Dauphin Street at the west end of the central business district. Such peripheral location of furniture stores, as of the automobile business, is common in most large cities. Automobile concerns line St. Louis Street which runs along the northern edge of the business district and is the Automobile Row of Mobile. Scattered through the commercial core are many areas marked "automobile." Outside St. Louis Street and Government Street these areas represent, for the most part, vacant land used temporarily for parking lots or inexpensive filling stations. Mobile's narrow downtown streets cannot be used for parking.

Wholesale and storage district.--As indicated in the occupation statistics, Mobile is an important wholesale center. Consequently considerable land is devoted to this use. Wholesaling occupies less valuable land than retailing but requires better extra-urban transportation connections. This was especially true when wholesaling began in Mobile. At that time, dependence on horse and wagon made intra-urban transportation slow and costly. For

¹A. M. Weimer and H. Hoyt, Principles of Urban Real Estate (New York: The Ronald Press, 1939), p. 60.

these reasons, wholesaling establishments in most cases are found on the edge of the retail district and along transportation routes to the outside.

In Mobile the wholesale district occupies a strip of land almost three quarters of a mile long and two blocks wide along Mobile River. Wholesaling naturally developed along the river in the days of steamboat navigation. Ocean ships and river barges still dock on the river front, and railway tracks and loading sidings occupy two of the streets parallel to the river. These bulk transportation facilities are factors favorable to wholesaling and the maintenance of the district in its present location. Another factor restraining the wholesale district from moving is the decline in Mobile of wholesaling, and the specific decline in storage of cotton with the result that the district is full of old buildings, many of them vacant. There is also much vacant land since many buildings have been demolished to avoid taxes. Thus, since there is no need for more space, there is no expansion.

One disadvantage of the wholesale district is its susceptibility to floods at times of high water. As the contour lines on Figure 4 show, most of the wholesale district in Mobile is below ten feet in elevation and some of it is only five feet above mean sea level. In severe storms, flooding of basements and even of ground floors occurs. One wholesale grocery moved out of the area recently to escape high water damages.¹ Truck transportation allowed the concern to remove from the railway-served districts. However the flood danger is not great enough to drive most firms away.

Within the wholesale district there is not as marked localization of activities as in some parts of the retail center. There is, nevertheless, a segregation of activities, based on land values and the tendency of like businesses to congregate. The most marked separation is that between wholesale and storage forms. Since storage generally uses more space than wholesaling it is found at the extremities of the wholesale district, north and south. Cotton, lumber, junk, and coal are the principal commodities handled in storage yards. Only cotton is housed inside buildings, other commodities generally being stored outdoors or

¹The City Sales Company moved from the central wholesale district to 700 North Conception Street.

in open sheds. The distinction between wholesale and storage is hard to draw on the basis of function, since wholesaling involves storage of supplies, and storage, as in coal and lumber yards, is an adjunct to wholesale and retail trade in these commodities. Nevertheless there are visible differences and these were mapped in the field.

The only significant specialization in the localization of wholesale functions is the concentration in one small area of most of the branch houses distributing meat. These are located near the northern end of the wholesale-storage district and are new buildings. Since fresh meat distribution out of Mobile, as in most of rural America, and especially in the South, is a relatively new development, the need for modern buildings to house the refrigerated meats resulted in the construction of these buildings on the edge of the wholesale district, where substantial structures in use did not need to be torn down to make room for the new plants.

In the wholesale district a variety of wholesale activities are carried on. Distributors of foodstuffs are important: wholesale grocers and brokers handle canned goods, sugar and other commodities; fruit distributors deal in bananas obtained from United Fruit and other boats, and in citrus fruits from Florida; vegetable dealers, flour blenders, and other types of food distributors are also present. Hardware, drug, machinery and paper wholesalers are common. Naval stores factors and ship chandlers likewise are numerous and reflect Mobile's distinctive location as a seaport in the Deep South.

Development of the commercial core.--The commercial core of Mobile has always been close to its present location. Expansion has occurred but the nucleus has moved little as Figure 4 shows. However there have been some short migrations of activities within the business district in response to changes in conditions. Initially Conti Street was the main shopping street, but in the 1850's Dauphin Street became the main retail street.¹ The reason is not quite clear, but is probably related to the fact that Conti Street was so narrow that the increasing traffic of growing Mobile caused congestion. In 1858 there was an omnibus line on Dauphin Street, and by 1860 tracks for horse cars.² Dauphin Street bene-

¹Hamilton, Mobile of the Five Flags, p. 274.

²Ibid.

fited from having important Springhill Avenue enter it, so that Dauphin Street became the main funnel for traffic from the growing western part of the city. Furthermore there appeared to be a tendency to develop around Bienville Square, which Dauphin Street bounded on the south side. Dauphin Street for years has been the main business street, so much so that Mobile appeared to be a one street town. Today Dauphin is still the most important business street but is not as dominant as formerly.

In recent years there have been some shifts within the business district. With the location of the new post office at the intersection of St. Joseph Street with St. Michael, two blocks north of Dauphin Street (Fig. 12), it appeared as though the business district might expand northward. The Merchants Bank, Mobile's tallest structure (19 stories), was built in 1929 only a block away at the northeast corner of Bienville Square; other property near the post office also took on importance. In Mobile it is customary for business concerns to collect their mail from their own boxes in the post office; hence a location near the post office is convenient and also has the advantage of tapping the pedestrian traffic moving to and from the mail distributing center.

Most recently, with the completion of the vehicular tunnel in 1941 under Mobile River, there appears to be a southward tendency in the growth of the business center, a reversal of the former trend. Even before the tunnel was completed, new construction was started on Government Street in anticipation of the heavy traffic which would pass down Mobile's main artery. In addition to bisecting the city, Government Street is the only wide thoroughfare entering downtown. Thus the new bus terminal and Mobile's newest hotel have been built on the south side of Government Street since 1940. These two structures alone are expected to lure other building to Government Street.

Prior to the construction of the new Admiral Semmes Hotel on Government Street, Mobile's main hotels had been close to the center of town. The hotels, especially the old Battle House, at Royal and St. Francis Streets, were located close to the river steamboat landings, and most of them have remained on their originally convenient sites. The railway stations apparently had little effect on their location as in many other cities, since the main passenger station, the Louisville and Nashville, is at the foot of Government Street at the southeastern edge of the business

center, and the Union Depot is eight or nine blocks north of the center of town.

If one were to forecast the future it would be quite in order to predict a large growth of business on Government Street, Mobile's most important traffic artery.¹ Government Street has residential property which can be acquired for large commercial buildings, and since Mobile is growing, a larger commercial center will be needed. Particularly in automotive lines does Government Street promise to become important. The downtown stretch of Government Street and the Broad Street intersection will probably become so desirable that higher class uses will occupy these sites.

Localization of Transportation Facilities

The most conspicuous features in Mobile's landscape are transportation forms. Their conspicuousness mirrors the importance of this activity to Mobile. Not only is transportation important in its own right, but, as has been demonstrated, the location of transportation routes and facilities influences strongly the localization of most other functions in Mobile.

If one takes a stand in the vicinity of Bienville Square one is close to the transport center of Mobile (Fig. 11). Leading out from this area are the routes connecting with the eight highways to Mobile's tributary area. To the south is an area of docks and railway yards; two railways run respectively southwest and northwest from this district. To the north is another and larger area of railway yards and docks. Here is the present center of the port of Mobile, the Alabama State Docks. From these large railway yards and terminals four railroads lead out: one to the northeast, two to the north, and a fourth to the northwest. Nearby, to the east of our central vantage point, is the deep water channel in Mobile River leading down the bay to the open sea.

Water transportation.--The west bank of Mobile River is lined almost solidly with docks for five miles. A mile and a

¹Paradoxically, through traffic congestion may become so serious on Government Street that it may be poor city planning to allow businesses to add to the congestion (Courtesy Mr. Arch Winter, Mobile Consultant, National Resources Planning Board).

half stretch in the middle of the dock frontage is in wharves parallel to the river. Small boats, river steamers and some ocean vessels dock here. Away from this central section, to the north and south where more land is available, berths at right angles to the river have been dredged out and piers built to accommodate large freighters. By this procedure more vessels can be accommodated on a given water frontage. Some of the berths are very long, especially at the Alabama State Docks where there are three piers ranging in length from 1,550 to 1,600 feet. In the State Docks unit there are also facilities for bulk handling, storage, both ordinary and refrigerated, and a variety of equipment for handling many commodities. South of the Alabama State Docks are several other piers, a grain elevator and molasses storage tanks. Modern banana unloaders are available at the State Docks and at the city wharf and the Louisville and Nashville wharf in the center of town. Near the southern end of the port are several lumber and general commodity piers. Arlington Pier at the extreme south provides recreational facilities and a yacht harbor. At several places north and south of the central wharves are oil storage tanks and docks for tankers. Bunker oil is available from pipe lines at the Alabama State Docks and at some other piers; coal bunkering facilities are provided on Blakeley Island and at the bulk materials wharf of the Alabama State Docks.

A channel thirty to thirty-two feet deep and 500 feet wide runs down Mobile River and provides a broad thoroughfare for marine traffic. Opposite the quarantine station on Sand Island at the mouth of the river, an anchorage has been dredged. In addition there is an 18 foot channel running two-and-one-half miles up Chickasaw Creek to the Gulf shipbuilding plant at Chickasaw. Further navigation facilities for shallow draft vessels are provided in the Industrial Canal running south from Three Mile Creek back of the State Docks and in Hog Bayou off Chickasaw Creek. The far-flung docks and complete marine equipment, as well as the extensive deep water channels attest to Mobile's importance as a port.

Railways.--The significance of Mobile's location on the west side of Mobile River is shown by the fact that all railroads enter the center from this side. The river and bay serve as the only effective barriers to railways around Mobile. Four lines enter the city on its northern side, a fifth from the west and the

sixth, part of the Louisville and Nashville through line comes in from the southwest. The preponderance of rail lines in the north is a reflection of the connections between the port and its hinterland. In addition to these main lines there are branch and belt lines which circle the city and, in combination with the Louisville and Nashville main line along Mobile River, form a complete ring of railroads around Mobile.

The four rail lines from the north focus on Mobile to create a large area of railroad yards north of the city. The Louisville and Nashville and the State Docks Terminal Railroad, which handles the Alabama, Tennessee and Northern tracks, as well as interchange traffic between all the lines, have large yards just back of the Alabama State Docks. The construction of the State Docks required relocation back from the river of the Louisville and Nashville tracks and construction of a docks terminal railroad. In these yards there are many tracks for flat switching, and facilities for loading, minor repairing and servicing. The Louisville and Nashville maintains a large roundhouse for locomotives. Adjoining these yards on the southwest are the large joint terminal yards of the Mobile and Ohio and Southern Railway. Large freight terminals and a large joint passenger station are conspicuous forms in this area. In addition there are a variety of terminal features: roundhouses, cranes, Y track for turning trains around, and other terminal equipment. Since these are the oldest yards in Mobile, some of the buildings are very old, especially since the business handled in the terminals has gradually declined through the years, and new buildings have generally been unnecessary.

The Union Passenger Station particularly stands as a monument to a bygone age. It was constructed in 1907 and is a large, ornate building with large waiting rooms, offices, and a huge, vaulted train shed with seven terminal tracks, only one or two of which are ever occupied by passenger trains.

The Louisville and Nashville is the only line running through Mobile; all the other roads terminate in the city. The Louisville and Nashville crosses Mobile River delta several miles above the city on a series of causeways and drawbridges and continues on to the Mississippi coast and New Orleans after leaving Mobile at the southern edge of the city. The tracks pass through the city by running down Commerce Street (one block east of Water

Street) through the center of town. The trains must run slowly at grade and occasionally are stopped by trucks or automobiles stalled on the track. However the interference is usually not great and the road regularly runs ten main passenger trains a day through the city.

The Louisville and Nashville passenger station at the foot of Government Street is smaller than the Union Station, but handles most of Mobile passenger traffic, inasmuch as the Louisville and Nashville is a through line connecting major centers, and provides the best, almost the only complete passenger service for Mobile. From the standpoint of avoiding duplication it would seem wise to run its trains into the large, virtually unused Union Station. The Louisville and Nashville does not favor this because it would require backing in or out of the station and entail considerably more terminal delay than at present. Furthermore there is little passenger interchange between lines at Mobile.

South of the Government Street Passenger Station the Louisville and Nashville has some yards, which it outgrew several years ago when the new yards north of the city were constructed. The yards in the southern part of town however are still used for passenger car servicing and some other purposes. Likewise the Louisville and Nashville freight depot and team tracks, as well as industrial and dock sidings, are all south of Government Street.

The Gulf, Mobile and Northern (combined with the Mobile and Ohio, since 1940 to make the Gulf, Mobile and Ohio Railroad) enters Mobile from the west after swinging around Springhill and comes into the center of town in the south side of the city. When the road was built in 1890, it skirted the southern limit of the built-up area of that time, to reach the waterfront at the south end of Mobile River. At that late date the other good entrances to the waterfront had been taken up by the older railroads. The Gulf, Mobile and Northern shops and yards are therefore in the southern part of the city and the passenger terminal is at Charleston and St. Emanuel Streets, eight blocks south of Government Street and the business district. This station has been unused since 1940, the one passenger train of the line taking on and discharging passengers at a small station at the west end of Government Street.

The Gulf, Mobile and Northern has also built a branch line around the northern end of the city to connect with the Ala-

bama State Docks Terminal Railroad and all the other lines entering Mobile. This line, in connection with the Gulf, Mobile and Northern main line into Mobile, provides a circuitous, alternate route around the city for use in case of emergency and might be termed a belt line. The Mobile and Ohio also has a branch line, serving several industrial sidings, which runs down the west side of the city. This line is the almost abandoned Bay Shore branch running to Bayou Labatre on the Gulf.

An outstanding feature of the rail lines in Mobile is their close connection with water transportation. Virtually every ship berth in Mobile is served by tracks which run out on the wharf or pier and enable direct transfer to be made between freight car and steamer by use of ship's tackle alone. Such universal and direct rail service is found in few other harbors and is one of Mobile's main assets as a port. The interchange facilities provided by the State Docks yards and railroad co-ordinates effectively the close connections between rail and water and adds the final touch which insures speedy transshipment of goods between land and sea.

In addition to the extensive rail facilities of the port, Mobile also has additional rail facilities because it is either the terminus, home office, or important division point for all the railroads entering the city. Yard buildings, repair and service equipment, and large office structures are prominent features of Mobile's transportation pattern, in addition to the tracks and yards themselves.

Streets and highways.--Mobile's street pattern is rectangular although many of the suburban communities have an irregular pattern. The spacing of streets and size of blocks however is not regular, nor are the streets all straight. As indicated earlier the streets are arranged in a series of major grids focusing on the business center (Fig. 11).

With the exception of Government Street, the streets in and around downtown Mobile are narrow, so narrow that many of them, including Dauphin, the main business street, are restricted to one way traffic. Congestion is serious and is becoming worse. The downtown parking problem is severe; in the center of the city parking is prohibited on the narrow streets and eventually will be banned on all downtown streets; around Bienville Square parking meters have been installed. Vacant land, as indicated earlier

is used extensively for parking lots. The removal of street car service and substitution of busses helped to relieve congestion, but the principal downtown streets are still saturated with traffic during rush hours.

Outside the business center the narrow streets give way abruptly to wider pavements of the relatively newer subdivisions. The main streets are shown by heavy black lines on the land use map. Some of these streets are very wide, particularly in the western part of town, except for Old Shell Road which follows the old, winding, narrow toll road to Springhill and originally was paved with oyster shells. Oyster shells are still used for paving some alleys and driveways in the city. On the Gulf coast oyster shells are cheap and abundant and provide a good surfacing for light traffic. The streets in Mobile are well paved, but the same cannot be said for the streets of the northern suburbs. Here a chaotic pattern of unpaved roads mirrors the politically disorganized character of this area, unincorporated save for the town of Prichard.

The main highways connecting Mobile with its northern suburbs are narrow, two-lane pavements choked with traffic, since only two roads carry the bulk of the traffic, St. Stephens Road running northwest, and Telegraph Road running north. The opening of the vehicular tunnel under Mobile River at Government Street has removed much of the through traffic from narrow Telegraph Road, and the new viaduct carrying the road over the Mobile and Ohio yards expedites movement, but industrial expansion in the area served by the road is creating heavy truck and auto traffic.

There are eight paved highways leading into Mobile, all of two-lane width almost to the city limits. Only three through highways run from the city limits to the edge of the downtown area on wide pavements--Government Street and Springhill Avenue from the west and Broad Street from the south. The highway from the east crosses the head of Mobile Bay on a causeway over low delta islands, and on bridges across the river channels, as well as through a tunnel opened in 1941 under Mobile River. This route, known as Cochrane Bridge, gives Mobile good connections with the eastern shore where good roads branch out in several directions. Before the bridge was constructed in 1927, Mobile's automobile connections with the eastern shore were provided only by expensive ferries. Today Cochrane Bridge is owned by the

state and is operated free of toll, although the tunnel which provides direct connection with the center of the city has a twenty-five cent toll. The tunnel saves about seven miles of congested driving to the center of town and seems destined to be used by the majority of drivers in spite of the toll.¹

Air fields.--Mobile's municipal airport was formerly located at Bates Field, less than a mile south of the city limits, near the bay shore. Since 1940 the field has become part of a large United States Army airplane repair base, which will be one of Mobile's major activities. A new municipal airport with runways adequate for the largest planes is being built several miles west of the city. Mobile is a stop on Washington--New Orleans and New Orleans--Jacksonville air routes. The new army air base will be the repair center for army planes from the whole South as well as from the Caribbean region.

Industrial Land Use

In terms of land use the industries of Mobile may be divided into two main categories: light industry, concentrated sharply on the edges of the commercial core, and heavy industry localized along some rail and water lines in the city and suburbs (Figs. 11 and 12). The light industries occupy little space. Heavy industry however takes up much land in Mobile, particularly a strip of land along the river front, with greatest development along the port outside the central business district frontage. Because of the close connection between most of Mobile's industry and water transportation, Mobile can be characterized largely as an industrial port. Industry not on the water front of Mobile is on rail lines, and since there is a belt of rail lines encircling Mobile and a concentration of railways north of the city, industries accordingly encircle Mobile, with greatest concentration along the river and north of the city.

Industry shown on the detailed land use map for the commercial core (Fig. 12) is almost entirely of the light variety: printing presses, machine shops, cleaning plants, bottling works, mattress factories, ice plants and the like. Many of these indus-

¹ See: "Report on Traffic Survey for Vehicular Tunnel at Mobile, Alabama," by Coverdale and Colpitts, consulting engineers (120 Wall Street, New York, June 24, 1940). (Processed.)

tries, such as printing concerns and machine shops, find it advantageous to be centrally located in order to serve local customers. Much of their business is custom-type retail trade. Therefore they cluster as close to the business center as is permitted by their relatively large space requirements in comparison with retail shops. Inasmuch as they do not need as much space as larger scale industries they can afford relatively congested quarters. In most cases the light industry buildings are old and run down and are more often found in the wholesale district than in the retail section. In some places light industry may take up space in the unused center of a block with only an entrance on the street. The only significant localization within the light industries is the concentration of printing establishments near the eastern end of St. Michael Street on the northeastern edge of the retail section. Associated with the printers are office supply stores.

The location of heavy industries in Mobile reflects their requirements as to site and space and the availability of suitable vacant land at the time of their construction.

Shipyards are an example of an industry requiring much water frontage. Mobile's main ship repair plant, as well as largest industrial concern, the Alabama Dry Docks, is located on Pinto Island where ample water frontage and cheap land are available. The absence of rail connections to the island, except by car ferry, renders the site less desirable for most other types of industry. Some smaller shipways are also located on Blakeley Island. The large, newly reconditioned plant of the Gulf Shipbuilding Corporation is north of the city, far from the congested areas, on a site with large amounts of vacant land available for expansion. The eighteen-foot channel in Chickasaw Creek serving the plant is deep enough for floating unloaded new ships, but too shallow for handling most loaded ocean going vessels. The few fish packing and shipping concerns in Mobile likewise are on water, although not necessarily on even moderately deep channels, since their boats are small.

The Aluminum Company plant provides a good example of a new industry taking advantage of a new site. The company needed a new plant somewhere on the sea coast in the southeast to meet expanding demands and to process raw material from new sources. Since virtually all their raw material, bauxite, came in by water,

a site on deepwater was required. The large block of vacant land on deepwater made available by the State Docks improvement provided a good site and was a factor attracting the industry to Mobile. Across the river is a large amount of low, vacant land on Blakeley Island which provides an ideal site for disposal of tailings. A pipe line carries the wastes across the river.

Paper mills are outside the center of town on large blocks of land accessible to transportation. Two large mills are north of the city, at Magazine and Sibert respectively, and a third large mill is in the southern part of the city, south of Choctaw Point. The three large mills have direct waterway connections for bringing in some of their logs on barges, floats, and rafts.

Sawmills, Mobile's most conspicuous industrial features, are scattered through the industrial districts. The sawmills and woodworking plants which use hardwood are all on waterways, principally Three Mile Creek (Fig. 11). Hardwoods come from river bottom lands, and although many of the logs will not float, they are moved out on rafts since water provides the only means of access to most of the swampy riverbottoms. Softwood mills generally have only rail and truck connections.

Most of the other heavy industries in Mobile are served directly only by rail and truck and in most cases are located on large tracts of land. The two cotton mills of the Mobile area are on the edges of town, at Crichton and Toulminville respectively, and although small, use large blocks of land, inasmuch as the plants have built mill villages to house their workers.

Social Land Use

Public buildings and grounds, with the notable exception of parks, are numerous in Mobile, and are scattered over the city. There is a noticeable concentration near the business center of public services serving the whole city, while elsewhere public buildings are scattered to serve local neighborhoods.

Mobile has many churches with a slight concentration of white churches on Government Street (the leading social street of Mobile) just west of the business center. The Negro churches are scattered through the Negro districts, but are concentrated particularly in the vicinity of Davis Avenue, the main Negro street. The Roman Catholic Cathedral is on Dauphin Street, three blocks west of Bienville Square.

The County Courthouse and City Hall face each other across Royal Street on the south side of Government Street. The new Post Office and adjoining Federal Building are near the northern edge of the most important business area, just as the local governmental buildings are on the southern flank. Between these two sets of governmental buildings are four blocks of concentrated business. One or two other old governmental buildings are nearer the center of town, including the old custom house at Royal and St. Francis, now used for miscellaneous governmental offices.

Most of the hospitals in Mobile are localized in a hospital area northwest of the business district on Broad and neighboring streets, just east of Springhill Avenue. Other hospitals are a short distance west on Springhill Avenue.

Cemeteries in Mobile follow faithfully the rule for cemeteries in locating on high ground. Most of the main burying ground, Magnolia Cemetery in the south central part of the city, is above the twenty foot contour line, and much of it on a slight rise over thirty feet in elevation.

Elementary schools are scattered through Mobile. Murphy High School, the public high school for whites is in the far western part of Mobile on a large campus. The buildings are badly crowded and another high school is needed, which may well be placed at Toulminville or Prichard to serve the students of the distant industrial suburbs.

The only parks in Mobile are a few small tracts, most of them only a block square. These squares serve admirably as local recreational and garden centers. Bienville Square, the pride of Mobile, provides a beautiful oasis of green in the center of town. A large park, however, is needed. The city owns Arlington Pier and adjoining land at the south end of the city, but the development of the Army Air Base in this district may well prevent the land from being redeveloped as a park. In order to get a waterfront site it may be necessary to go south of the city or use the south end of Blakeley Island; the latter, although close to the business center, is impossible to reach except by boat or autos paying toll through the tunnel or taking the circuitous bridge route to the north. Furthermore the island seems to be regarded as a reserve for future port and industrial expansion. In the meantime Mobile remains without a large park, either on the waterfront or in the interior.

Residential Land Use

Housing occupies by far the largest area of land in Mobile, as in all cities. Broad features of the pattern discernible on the land use map (Fig. 11) are: (1) the wedge, pointed to the business district, of good and medium class housing in the relatively high western part of the city, (2) the poor Negro areas flanking the business center on the northwest and south, and (3) the large area of dispersed housing of medium and poor grades in the northern suburbs. Mobile is large enough to exhibit a high degree of localization and thus has residential districts of a definite character. Every house in the various districts is not of the same class, but the similarity is sufficient to create the large, relatively uniform districts as outlined above.

High class housing.--Good type houses are found almost exclusively in the western part of the city. The main avenues, Government Street, Dauphin Street, and Springhill Avenue are lined, especially on their western ends, with high class residences. For the most part these are large, old houses. Since the automobile has created so much traffic, the main avenues, such as Government Street have become less desirable and most new construction of good houses takes place on quiet side streets, although Government Street still retains much prestige.

This western section of Mobile is not crowded; much of it resembles the suburbs of large American cities. Since Mobile is not large enough to be as congested as the huge metropolises, there are few high class suburban dwellings outside the city proper.

The only desirable suburb is Springhill and it is small, having a population of only 2,354 in 1940. The 150 foot rise in elevation and rolling topography extending south to Cottage Hill makes this the most attractive countryside around the city. At Springhill the Country Club with its golf course, and Springhill College have taken advantage of this choice site to develop beautiful grounds. There are many old houses surrounded by beautiful woods and lawns in Springhill. Many of these old houses are only modest structures, but there are several costly new mansions, as well as many smaller new homes of high quality.

Medium class housing.--Medium type houses are found in many places in Mobile, particularly in the western residential

area. There are also medium types just north and south of the business center; many of these houses are run-down relics of an earlier period when Mobile was small. Toulminville and Chickasaw, north of Mobile, and Springhill likewise have some medium housing. Houses in the other suburbs are poorer, although there are some scattered areas of middle class residences.

Low class housing.--Poor types of housing in Mobile are most numerous in the Negro districts close to the center of town and in the poor white and Negro districts of the northern suburbs (Fig. 11). There are also poor areas, both Negro and white in southern Mobile and in Crichton, between Mobile and Springhill. Most of the poor sections are close to railroad yards or factories, and house industrial workers. The poorest of the poor type houses are found in some of the Negro districts, particularly at the eastern end of the largest Negro section of Mobile. This portion, near the railroad yards and center of town, is the oldest and most dilapidated part of the northern Negro district. In this slum area a large colored housing project has been built and provides a welcome contrast to the squalor of the surrounding shacks. Mobile's white housing project is in the southern part of town in a less poor district. Another area of extremely poor housing is the Negro settlement of Plateau, north of Three Mile Creek.

As the land use map (Fig. 11) shows, poor type housing occupies as much land as medium and good types combined. Much of the poor type is definitely below standard; ample opportunity for slum clearance exists in Mobile. The difficulty lies in the extremely low income of the poorest Negroes. The warm climate of Mobile, it should be pointed out, makes flimsy houses less undesirable than in the north. Nevertheless there are periods of cold weather; during these cold spells poor people are hard pressed to keep their open shacks warm. Many inhabitants are so poor that they manage to keep warm only by foraging for driftwood or other leavings of saw mills to burn. One poor Negro in consequence cherished the location of her shack on the unsightly banks of Three Mile Creek because she could fish out driftwood so easily from the creek at her back door--another, but unexpected, example of the advantage of water transportation!

Rooming houses.--Individual structures house practically all of Mobile's population, as in most American cities, save the very largest. Most of these houses, in the poor and medium

classes, are one-story structures. Although there are few apartment buildings, rooming houses are numerous, and are concentrated on the edge of the commercial core (Fig. 12), a localization characteristic of most cities. Large, old houses, common in the older, central parts of Mobile, are particularly adapted to rooming house use. The availability of these old houses plus the demand for quarters from the new industrial workers in Mobile results in many rooming houses. The adjustment of old to new is nowhere more evident than in this widespread use of old homes.

Land Use in Mobile and the Theoretical Pattern for American Cities

Elements of the normal or theoretical patterns of land use for an idealized city can be recognized in Mobile. Parts of Mobile conform to the concentric zone theory for urban land use and expansion.¹ Thus there is a downtown business core in Mobile with a zone of transition or deterioration surrounding it (Figs. 11 and 12). In this zone are the rooming houses, tenements, light manufacturing plants, and land uses less valuable than those in the central core. Surrounding this zone is a third zone, a zone of workingmen's homes and slums.

The outer rings of land use, consisting of good residential areas and a commuter's zone, can also be seen in Mobile, although the city is hardly large enough to have an extensive commutation zone.

As we have seen, a triangular wedge of good residences points into the business section on the west and hence destroys the absolute uniformity of the concentric zones (Fig. 11). Nevertheless the poor zones around the business center can be readily seen in Mobile. This one break through of better land use extending from the high class residential area to the commercial core is a feature of most cities. Some authors like to think of an axial theory for land use expansion along main thoroughfares. Actually the concentric ring and axial principles work together

¹For exposition of this theory see: R. E. Park, E. W. Burgess, R. D. McKenzie, and Louis Wirth, *The City* (Chicago: The University of Chicago Press, 1925), pp. 50-53, or E. W. Burgess, "The Growth of the City: An Introduction to a Research Project," *Papers and Proceedings of the American Sociological Society*, XVIII (1923), 85-97.

to create a modified concentric pattern, theoretically star shaped with extensions out along the main lines of urban transportation.

The greatest divergence from the normal pattern is the large development of low grade residential and industrial suburbs in the northern half of the Mobile area. The reasons for this have been given: the interruption to growth caused by the low land along Three Mile Creek and the concentration of railways coming into the city from the north which pass through this area. Because of the railway facilities and absence of close settlement, this area proved the most desirable in Mobile for establishment of large scale, new industries. Its growth is recent and mirrors the new industrial expansion in Mobile. Associated with the new industries are new homes for workingmen. Since Mobile formerly was only slightly industrialized, there is a relatively smaller industrial concentration near the center of town than in cities that have always been industrialized.

Elements of the sector theory for urban growth can also be discerned. According to the sector theory, as the city grows, similar land uses tend to expand out from the central part of the city in a line toward the city limits.¹ This is best seen in the outward extensions of high grade residential districts. Not all high grade districts will expand uniformly however. The lineal outward growth is discouraged and stopped by industrial and topographical barriers.

In Mobile this sector principle can best be seen on Government Street and in the general expansion of high grade residential building westward. Church Street, one block south of Government was also part of the high grade residential district south of the center of town in the early days. The westward growth of this good residential sector was stopped by the old cemetery, in front of which the library now stands. The result is that there are a few fine old houses left on Church Street close to the center of town, while beyond the cemetery the character of the street changes to middle quality.

The most extensive area of good residences in Mobile in the early nineteenth century was on the northern edge of town, along State and adjoining streets. Many of these fine old brick

¹See: Homer Hoyt, "City Growth and Mortgage Risk," The Insured Mortgage Portfolio, Vol. I (1935), Nos. 6-10, or A. M. Weimer and H. Hoyt, op. cit., pp. 60-63.

houses, trimmed with iron lace, still stand, but the district has declined with the growth of the city and today most of this close-in residential area can be characterized only as middle class. Many of the homes have been converted into rooming houses, although a few are still kept up. This deterioration close to the center of town is the rule in growing American cities. However this district never became the nucleus of a high grade residential sector, as the less important Government Street district to the south did. The area was discouraged from expanding northward by the railway yards and swamp land. Why westward expansion did not occur is not so clear but is probably explainable on two grounds: (1) the old Negro area, fronting on the railroad yards and the low land to the north, expanded westward in sector fashion and cut in behind the good area, since the Negro district could expand only west and south, because lowland along Three Mile Creek prevented northward growth, and, (2) the main arteries of Springhill Avenue, Old Shell Road, Dauphin and Government Streets radiated out from the southwestern edge of the commercial core rather than from the northwestern edge and good residences tended to follow these routes. These main roads had horse car and later electric car lines on them and tended to promote an axial growth outward of the city.

In Mobile there are also evidences of centripetal and centrifugal migrations.¹ Evidences of outward or centrifugal movements are more common, as in most American cities. Some of these movements have already been noted: the construction of new railway yards by the Louisville and Nashville Railroad north of the city to supplement the old, congested yards in the south central part of town, the embryonic development of outlying business centers, and the large industrial growth on the outskirts of town. High land values in the center of town plus the widespread use of the automobile have been the most important causes for these movements. There has been little actual transfer of existing functions in Mobile, as in some very large cities;² the development

¹For an exposition of these forces see Charles C. Colby, "Centrifugal and Centripetal Forces in Urban Geography," Annals of Association of American Geographers, XXIII (1933), 1-20.

²Cf. R. M. Haig and C. R. McCrea, "The Assignment of Activities to Areas in Urban Regions," in "Major Economic Factors in

of peripheral areas is a reflection primarily of expansion.

There are few clear cut examples of actual centripetal, or inward movement, although the existing concentration of business (in itself a centripetal force), ease of access, and established custom maintain many functions in the center of town. However the movement of Sears Roebuck's retail store from Government Street to a site on Royal Street two blocks north, nearer the center of the retail district and next door to Mobile's largest department store and furniture store, might be considered an example, as is the construction of the new Gulf, Mobile and Ohio office building at St. Francis and Royal, near the office center of Mobile. The Gulf, Mobile and Northern was forced to vacate old quarters on the site now occupied by the new Sears Roebuck store. In both these movements availability of land was an important factor, although in each case the new site was closer to the center of town than the old, and especially nearer the center of localization for the function involved.

CHAPTER VI

TRANSPORTATION AND ITS EFFECT ON THE CITY

For a precise determination of the areal support of a city it is desirable to know the amount of trade moving into and out of the city, the origin and destination of this trade and the routes of movement. This traffic flow is the concrete physical measure of the relations between the city and the areas supporting the metropolis.

In the case of Mobile an understanding of the transport connections is particularly important because the transportation function, as shown in the preceding chapter, was, and perhaps still is, the most important employer of labor in Mobile. Thus much of the trade handled at Mobile is through traffic, most of which is transferred from one form of transport to another, and not simply goods moved in and out of the city to supply the city's manufactural and commercial needs. The transfer of goods from one form of transport to another, as from rail to ship however provides much more employment than through shipment without break of bulk. More significant than even this to Mobile is the fact that good transportation is the prime reason for the location of most industry in the city. This might be said of most cities but, as will be pointed out, has a direct effect in Mobile. The city has become an industrial seaport.

Goods move into and out of Mobile (1) to supply the needs of the city and vicinity and (2) because Mobile is the strategically located funnel through which freight passes from one region to another. The division between these two aspects of traffic-flow into and out of the city is often hard to define because some goods moving through the Mobile funnel are processed in the port, some are only re-packaged, as in the conversion of cotton from bulky low density bales to concentrated high density bales, and some are changed so completely as to become different commodities, as the manufacture of lumber from logs or alumina from bauxite.

Mobile is primarily an example of a city which has developed at a point where there is an important break in transportation, a break of bulk point, in line with Cooley's theory.¹ Only secondarily is Mobile a central place supported by a variety of urban services performed for surrounding territory, as Atlanta or Des Moines.² Since transportation, directly and indirectly, is the basic support of Mobile, an understanding of its operation in the city is necessary for an understanding of Mobile.

Ocean Trade and the Port of Mobile

The most important part of Mobile's transportation activity is its port business. Mobile handled 4,737,000 tons of cargo in 1938 making it approximately sixteenth in size among United States ports.³ If the almost exclusively oil shipping ports of Beaumont, Port Arthur (about 19,000,000 tons of commerce apiece), Corpus Christi and Port Aransas (about 7,000,000 tons apiece) are excluded, Mobile would move up to twelfth place in the nation and third place on the Gulf, after New Orleans (17,224,000 tons) and Houston (26,737,000 tons, mostly petroleum and products). Mobile is also larger than any of the South Atlantic ports of the United States south of Norfolk (Hampton Roads, 24,083,000 tons, mostly coal). In 1940 Mobile handled 4,951,000 tons of freight⁴ and an additional 756,852 tons of cargoes in transit.⁵ Most of the cargo in transit business is barge traffic coming from the rivers above Mobile and passing out of the port without break of bulk. River

¹C. H. Cooley, "The Theory of Transportation," Publications of the American Economic Association, IX (May, 1894), 1-148.

²For an exposition of the central place theory, as expounded by Walter Christaller, see: Edward Ullman, "A Theory of Location for Cities," American Journal of Sociology, XLVI (May, 1941), 853-64; also: Geographical Review, XXXI (October, 1941), 683-84.

³Board of Engineers for Rivers and Harbors, Port and Terminal Charges at United States Seaports (Washington: Government Printing Office, 1940).

⁴U. S. Army Engineers, "Commercial Statistics Mobile, Alabama District, 1940" (U. S. Army Engineers, Mobile, 1941). (Mimeographed.)

⁵Exclusive of tonnages remaining on board vessels calling at the port; such tonnages are not included in any of the figures given here.

and intracoastal waterway traffic accounted for 1,513,480 tons and local traffic 80,156 tons: if these are subtracted from the total traffic of Mobile (exclusive of cargoes in transit), the volume of the ocean shipping of the port is 3,356,118 tons, which is still enough to maintain Mobile in its same national ranking.

Mobile's trade is well balanced, outbound exceeding inbound tonnage by only a slight margin as Table 4 shows. The major commodities handled through the port are shown in Table 5. In recent years three commodities have made up approximately two-thirds of Mobile's ocean tonnage. They are, in the order named: (1) petroleum and products, (2) iron and steel products, and, (3) wood products, chiefly lumber, but including paper and naval stores. In value, iron and steel is first, wood is second and petroleum third. By 1940 bauxite (aluminum ore) imports had become so heavy that bauxite should be listed as the fourth major commodity in tonnage movement (but not value), ranking behind the first three.

Cotton no longer is among the big three, and is merely one of the important commodities which make up the remaining third, along with fertilizer materials, coal, manganese, bananas, and a variety of minor movements. Mobile does not have as great a variety of commerce as has a large world port, such as New York or New Orleans. On the other hand Mobile is not a one commodity port, nor merely an outbound port.

Ocean Trade Routes of the Port

Figure 13 shows all ocean-borne tonnage of Mobile according to origin, destination, and route; it is a quantitative representation of the maritime connections of Mobile.¹ The map is for

¹So far as the writer knows this map is the first ever to be constructed showing all the marine trade of an ocean port. Basic sources for the map and the text that follows were combinations of figures in: Board of Engineers for Rivers and Harbors and U. S. Maritime Commission, The Port of Mobile, Alabama (Washington: Government Printing Office, 1938) and U. S. Maritime Commission, Report on Volume of Water-Borne Foreign Commerce of the United States by Ports of Origin and Destination [Fiscal year ending June 30, 1937] (Washington: Government Printing Office, 1939). Local steamship companies also supplied figures on coastwise trade, which is not treated in the two publications listed above. The specific sources for the latter figures are given in the treatments of coastwise routes in the sections that follow.

TABLE 4
OCEAN TRADE OF MOBILE^a
(000 Omitted)

	1936		1938		1940
	Tons	Value	Tons	Value	Tons ^b
Inbound.....	1,340	\$ 37,179	1,406	\$ 36,583	1,699
Imports.....	339	6,395	407	7,065	705
Coastwise receipts.	1,001	30,784	999	29,518	994
Outbound.....	1,376	66,292	2,038	71,648	1,651
Exports.....	752	31,100	1,420	33,978	640
Coastwise shipments	624	35,192	618	37,670	1,016
Total.....	2,716	103,471	3,444	108,231	3,350

^aU. S. Army Engineers, "Commercial Statistics, Mobile, Alabama District, 1940" (Mobile: U. S. Army Engineers, 1941). (Mimeographed.)

^bValue not reported for 1940.

TABLE 5
PRINCIPAL OCEAN-BORNE COMMODITIES HANDLED
AT PORT OF MOBILE^a
(000 Omitted)

	1938		1940
	Tons	Value	Tons ^b
Petroleum and products....	845	\$10,920	962
Iron and steel.....	757	26,776	680
Lumber and forest products	424	17,363	463
Bauxite.....	144	949	407
Fertilizer and materials..	95	12,210	128
Cotton and products.....	44	11,279	41
Coal.....	70	317	134

^aCompiled from U. S. Army Engineers, "Commercial Statistics Mobile, Alabama District, 1940" (Mobile: U. S. Army Engineer, 1941).

^bValue not reported for 1940.

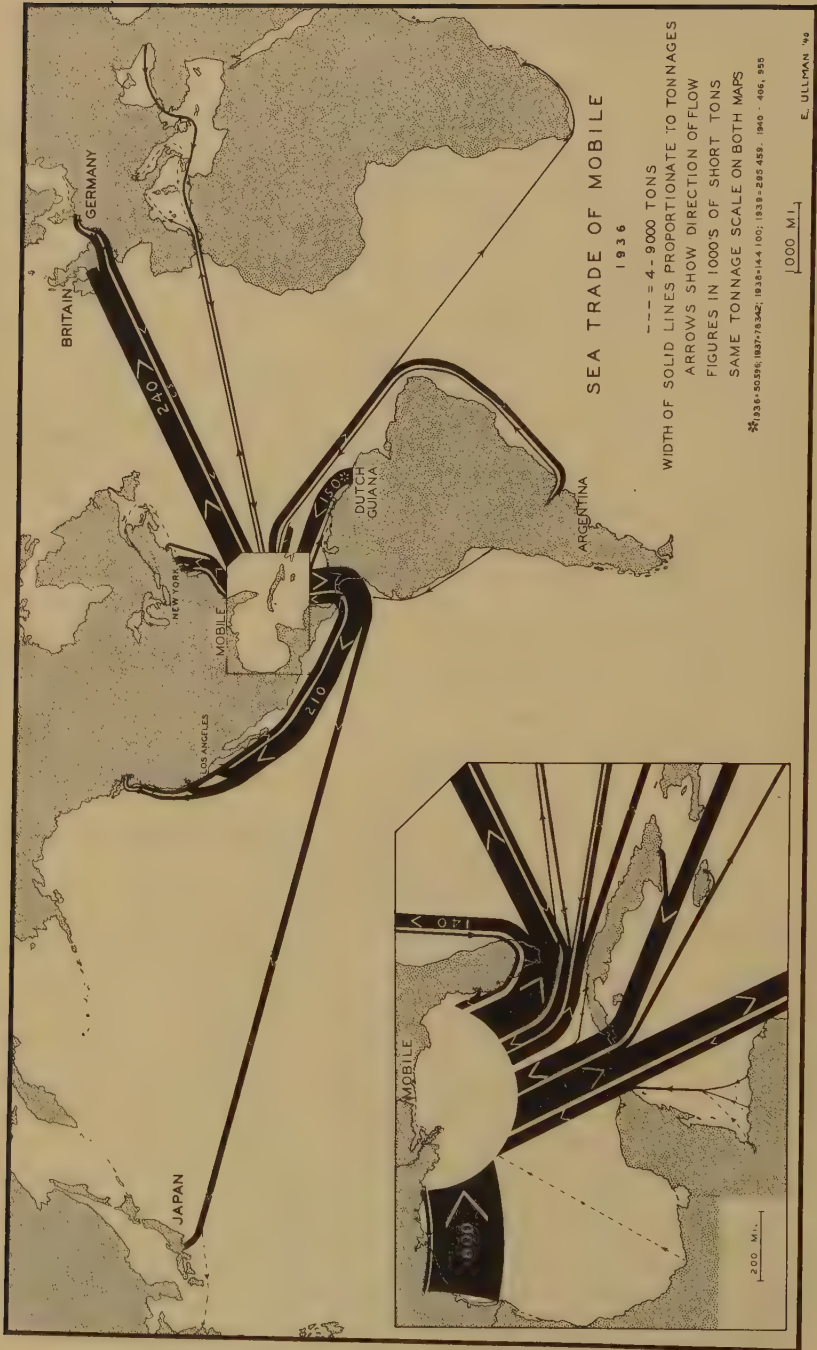


Fig. 13.--Ocean Trade of Mobile, 1936. The map is also essentially correct for 1937 and 1938

the year 1936, because that is the most representative recent year for which complete statistics could be gathered. The map is an approximately true picture of the trade of Mobile for later years, however, up to the outbreak of the war in 1939, which cut off trade with Germany and southern Europe. The greatest change in the intervening years was in the increase of bauxite shipments which is noted on the map. Some other increases or decreases since 1936 were also taken into account in drawing the map and are explained in the text which follows.

Texas ports and the oil trade.--The most important trade route is that to and from Texas ports, principally Houston, Galveston, Beaumont and vicinity (about 800,000 tons). This trade is almost exclusively petroleum products, of which gasoline accounts for about 400,000 tons. This heavy movement reflects Mobile's position as the most important oil distributing point in the eastern gulf, a position Mobile logically possesses because it is the most convenient port on the shortest combination water-land route from Texas fields to important southern consuming centers such as Birmingham, Atlanta and the eastern Tennessee valley points. Some of the petroleum products move from Mobile by barge, mainly up the Tombigbee-Black Warrior Rivers to Birmingport (about 100,000 tons), but most of it is shipped out by rail and some by truck.¹ A small amount of crude oil is refined at Mobile by an independent refinery employing about 40 men.²

Although the petroleum tonnage moved into Mobile is huge, the movement is not as important to the port as tonnage figures alone would indicate because: (1) although the movement is almost a third of the total ocean tonnage of the port, in value it is only slightly more than a tenth of the total, (2) since oil moves in tankers and is readily pumped, relatively little equipment or labor is needed to handle it, (3) since tankers carry only oil, their movement in and out of the harbor does not provide more sailings for general cargo which would add to the attractiveness

¹In 1939, 12,000 cars of petroleum products were shipped out of Mobile by rail; at 40 tons per car this equaled 480,000 tons (Data from R. G. Cobb, Manager, Traffic Department, Mobile Chamber of Commerce).

²The Coastal Petroleum Company often gets more crude oil from Yazoo City, Mississippi, by rail, since it can move most of the distance over the A.T. and N. R.R., which owns the refinery (Courtesy E. C. Ash, A.T. and N. R.R., Mobile, Alabama).

of Mobile as a port. However, the fact that tankers make Mobile a major terminus is an indication of the strategic natural location of the port.

In addition to ocean shipments, already noted, much oil and gasoline comes via barge over the intracoastal waterway, principally from refineries at Baton Rouge. With the completion of the pipeline from Port St. Joe, Florida (at the eastern end of the intracoastal canal) to Atlanta and Chattanooga, Mobile should lose some of its oil distributing area; Jacksonville, with a slightly greater volume of oil movement (Mobile's major competitor in the southeast) should also suffer. In addition it is possible that some petroleum barges may be run through from Louisiana and Texas to Birmingham without unloading at Mobile.

Northwest Europe: lumber, cotton, and fertilizer.--The second most important trade route was to Northwest Europe (approximately 315,000 tons). Outbound traffic was heavier than inbound as one would expect in trade between a relatively new, largely raw material producing region, such as the hinterland of Mobile, and an old, industrial area, Northwest Europe. The movement from Mobile to northwestern Europe is old. Eighty years ago, as has been shown, it was as important as all the rest of the trade of the port. This was at the peak of cotton shipment through Mobile (1860: 600,000 bales, approximately 125,000 tons, two-thirds of which went to England and the northern continent). In 1936 lumber and cotton dominated the trade with lumber an easy first. Chemicals, for fertilizer mixtures, from Hamburg, Bremen, Rotterdam and Antwerp, were by far the leading imports. Mobile prepares some fertilizers, but is not as important as Pensacola, which is nearer the market area and consequently has slightly lower freight rates. Eastern Alabama, contiguous Georgia and parts of north Florida have more farms and buy more fertilizer than the area immediately north of Mobile.

Intercoastal route and the iron and steel traffic.--The third trade route in importance is that to the American Pacific coast (about 370,000 tons), and here again outbound trade is the main movement. In some years Mobile is the leading gulf port in intercoastal trade. This reflects Mobile's position as port for the Birmingham district; over 85 per cent of the trade to the United States Pacific Coast consists of iron and steel products

en route to California. Return cargo is small, mainly foodstuffs--canned and dried fruits from California and, in some years, wheat and flour from the Pacific Northwest. The flour is blended with other flour in several small plants in Mobile, to prepare it for the tastes of people in the Mobile area and the neighboring southeast.

The volume of traffic between Mobile and the Pacific Coast is about twice that from Mobile to Atlantic Coast points. At first glance this seems surprising, inasmuch as the Atlantic Coast generates a greater total volume of trade than the Pacific Coast and is less than a third as far away from Mobile. The Atlantic trade is relatively light because Birmingham iron and steel does not move to the industrial northeast because of the great iron and steel production there. Birmingham as compared with Pittsburgh has a short water and land haul to the Pacific Coast where there are no blast furnaces. In the iron and steel trade to the Pacific Coast Baltimore is even more advantageously located than Mobile because Baltimore produces steel at tidewater. As a result Baltimore normally ships about twice as much iron and steel to the Pacific Coast as Mobile.¹ The two ports between them supply the bulk of the Pacific Coast's iron and steel needs.

Northeastern United States.--Although not as important as the trade routes already discussed, trade to the eastern seaboard nevertheless is relatively heavy (about 160,000 tons) as would be expected for such an important region.² Movement is largely outbound from Mobile (about 140,000 tons), as in the case of the trade to Northwest Europe. About half the trade goes to New York, the other half to Philadelphia and Boston. About 60 per cent of this trade is paper and paper products, which reflects Mobile's growing importance as a paper manufacturing center. Other important items shipped are naval stores (15 per cent), lumber (10 per cent), and pig iron (10 per cent). Return cargo is light, chiefly canned goods and a few specialized iron and steel

¹Board of Engineers for Rivers and Harbors and U. S. Maritime Commission, The Port of Baltimore, Md. (Washington: Government Printing Office, 1939).

²Figures by courtesy of the Pan Atlantic S.S. Co. of Mobile who estimate that they have about 75 per cent of the business, the remaining 25 per cent being handled by charter steamers.

products. The returning vessels continue on to New Orleans, the large general import port of the Gulf and there discharge most of their cargo, although the total southbound movement remains lighter than the northbound.

Dutch Guiana and the bauxite imports.--The last very heavy movement into Mobile is bauxite (aluminum ore) from Dutch Guiana. In 1936 imports of bauxite were 50,596 tons; 1937, 78,342 tons; 1938, 144,100 tons; 1939, 295,459 tons; 1940, 406,995 tons.¹

In terms of services provided to the port the bauxite trade gives Mobile one of its most important advantages, because the Aluminum Line which carries the bauxite is anxious to secure return cargo, since their boats, unlike tankers, can carry a variety of commodities. In most cases the vessels in this trade carry other commodities along with bauxite. In part this practice is due to the fact that, since the bauxite loading stations in Dutch Guiana are several miles up a rather shallow river, ocean vessels cannot clear the shoals if they load bauxite to their limit. As a result they load a part cargo of bauxite and then complete their cargo by calling at ports in Trinidad, Venezuela, Jamaica and Barbados. Some bauxite is also transshipped to larger vessels at Trinidad from small boats operated in shuttle service to these ports from Dutch Guiana. Bauxite movement therefore gives Mobile the opportunity of offering to general shippers excellent services to a variety of Caribbean ports which would not otherwise be served.

Bauxite is handled through the modern, mechanized bulk unloading plant of the Alabama State Docks. Hence it might be assumed that this large tonnage was not as significant to the port as some other commodities, such as iron and steel, which require more handling. Actually the bauxite flow is very important to Mobile because since 1938 most of it has gone into the large new alumina producing plant on the waterfront of Mobile. This is the second largest industrial plant in Mobile, being exceeded in size only by the Alabama Dry Docks. In number of employees, however, the plant is only the fourth largest since its approximately 400 workers are fewer than the number at the Drydocks or the two large paper mills. The plant is so highly mechanized

¹Because this import has been increasing so steadily and rapidly its volume is shown as 150,000 tons on the map.

that great numbers of workers are not required.

The Mobile plant for reducing bauxite to alumina was built in 1938 after a careful investigation of possible sites. This process is the first stage after preliminary drying in treatment of bauxite or aluminum ore.¹ When once it is produced the alumina (aluminum oxide) produced at Mobile is shipped to metal refining plants at Alcoa, Tennessee and Badin, North Carolina for production of aluminum (metal). Formerly all the alumina in America was produced at East St. Louis, Illinois. With the recent expansion of the aluminum industry, additional alumina producing facilities have been needed. In recent years, only about 25 to 35 per cent of the bauxite used in the United States has been mined in this country, principally in Arkansas convenient to East St. Louis. Almost all of the remainder of American consumed bauxite has come from Dutch Guiana. In view of the long haul to East St. Louis and the rapidly increasing demand the company sought a location more accessible to the raw material on the one hand and eastern market centers on the other. Since bauxite constitutes about 90 per cent of the raw material and loses about half its weight in being converted into alumina (1.9 pounds bauxite equals one pound of alumina) it was logical to locate the plant at tide-water. In terms of alumina weight loss alone it might have seemed best to have the plant in Dutch Guiana near the mine mouth. However, ocean shipping is cheap, and the possible savings in ocean freight rates were not considered enough to make the drastic move of setting up a plant in the wilds of Dutch Guiana where fuel, white labor and living are expensive. Neither coal nor natural gas is produced in Dutch Guiana.

The eastern seaboard was discarded as a possible location, because the Aluminum Line had already built up an established trade to and from the Gulf in connection with hauling bauxite to Gulf ports, principally New Orleans, Baton Rouge, and Mobile for delivery to East St. Louis, which was closer to the Gulf than to the Atlantic. In addition general labor and industrial costs appeared to be less on the Gulf than on the Atlantic, and freight rates to the refineries were no higher. Pensacola and other Gulf ports not served by the Aluminum Line or not having much freight to be hauled were also discarded.

¹Data secured primarily from Aluminum Company of America.

Mobile finally was chosen over Baton Rouge or New Orleans, in spite of shipping less general cargo, because the site was better. In Chapter V it was shown how the site at Mobile had excellent tidewater shipping facilities and ample space available across the river for disposal of tailings. With the wartime expansion of aluminum production, the Mobile site however may well be too small to accommodate all possible expansion.

Other location factors are satisfactory at Mobile. Natural gas, which is used in large quantities in roasting and drying processes, is available. Soda ash and lime (which together account for about 8 per cent of the raw materials), come respectively from the Texas Coast (by water) and from East St. Louis. The number of rail lines leading from Mobile to the refineries insures competition and good rail service. Political conditions (taxes, and so forth) are considered as good, if not better, at Mobile than elsewhere. Taxes however were not a controlling factor, although the peculiar political situation in Louisiana may have had some intangible influence.

Since the Mobile plant is new, it is much more efficient than the old plant at East St. Louis, and is expected eventually to replace it as the alumina producer for all ore except the small amount produced in Arkansas. The refineries however will remain closely tied to cheap water power, since power is by far the most expensive item in refining metal. It is estimated that electricity even when cheap represents about 60 per cent of the price received for the refined product.¹

Lower east coast of South America.--The remaining overseas trade routes to Mobile are usually all under 75,000 tons in annual volume. The most important is to the lower east coast of South America, 90 per cent to Argentina, the remainder to Uruguay and Brazil, about 75,000 tons in total. Outbound trade dominates (55,000+ tons) with lumber accounting for about 90 per cent of the total and naval stores and iron and steel making up the small remainder. The populous Argentine Pampa and contiguous Uruguay have no usable lumber, and consequently import from the forested southern coastal plain. Return cargo (about 18,000 tons) was almost entirely corn from Argentina. In 1937, after a poor corn

¹See Warren S. Strain, "The Aluminum Industry in America," Journal of Geography, XXIX (1940), 257-68.

year in the United States 115,000 tons of corn were imported. This is abnormal; as a rule none is imported. In fact, in 1938, 290,000 tons of corn were exported (not to Argentina) from Mobile and in 1939, 63,000 tons. By 1940 corn movement in any direction had practically ceased.

Japan.--Trade with Japan in 1936 amounted to about 35,000 tons, while for the fiscal year ending June 30, 1937, it was 114,000 tons.¹ As a compromise figure 60,000 tons is indicated on the map since the movement continued to be heavy up to 1941 (when we began to get the cargo back through the air!). The trade was all outbound, over 90 per cent iron and steel, mostly scrap, with cotton comprising the remainder.

Trade to the western and northern Caribbean.--Mobile's banana trade has been fairly important throughout the twentieth century, although not approaching the volume handled at New Orleans or even New York or Boston. Tonnage ranged from approximately 60,000 in 1936 to 94,000 in 1938 and 70,000 in 1940. Most of the bananas come from the northern coast of Honduras, with small amounts also from contiguous Guatemala and Nicaragua. This coastal strip of tropical rain forest climate is the chief producer of bananas in the world. Some bananas (15,000 tons in 1936-1937) also came from Puerto Armuelles on the western end of the Pacific Coast of Panama.

Mobile has bi-weekly arrivals of United Fruit boats. These are unloaded by modern banana elevators. Refrigerator cars, lined up at the docks, move the bananas out quickly. In addition small, privately owned, banana boats without refrigeration bring small lots of bananas into Mobile on irregular schedule from nearby points such as southern Mexico. These boats depend upon speed and ventilation to bring the bananas into Mobile in good condition. Mobile is a good port for them because it is the most quickly reached by sea of any of the chief Gulf ports. On the other hand a large city such as New Orleans provides a large mar-

¹Figures in the Port of Mobile, Alabama are for calendar year ending December 31, 1936; in the U. S. Maritime Commission, Report on Volume of Water-Borne Foreign Commerce of the United States by Ports of Origin and Destination (Washington: Government Printing Office, 1939), they are for the fiscal year July 1, 1936-June 30, 1937. The latter publication was discontinued after 1937.

ket in which ripe bananas can be quickly sold before they rot. In the days before refrigeration, New Orleans was particularly favored for this reason and thus secured an early lead in the banana business, which it has maintained to this day.

Trade between Mobile and Puerto Rico is relatively heavy (in comparison with trade between other Caribbean Islands--about 55,000 tons annually),¹ because Mobile is the home port for the Waterman Line, one of the leading steamship lines serving Puerto Rico.² In addition Mobile's hinterland has some products which Puerto Rico needs, particularly lumber, and iron and steel products, the leading commodities handled, in order of importance. Some potatoes, lime, and cotton piece goods are also shipped out. Return cargo is very light, since Mobile has no sugar refinery to handle raw sugar, Puerto Rico's major export.

Trade with Cuba amounts to about 60,000 tons annually, with about 55,000 tons consisting of imports. Sugar (11,000 tons) and molasses (20,000 tons) from northern Cuban ports were most important in 1936. By June 1937, however, manganese ore imports from Santiago de Cuba had increased from 17,000 tons to 41,000 and continued to increase as demand for manganese ore in Birmingham iron and steel plants increased and the Russian supply was cut off. The United States has virtually no readily usable manganese and therefore must import this necessary steel hardening material. Although Cuban trade is rather heavy, it is surprisingly light in view of the importance of Cuba and its nearness to Mobile. One reason for the lightness of the inbound trade is the lack of sugar refineries (as indicated earlier) to use Cuba's main export, raw sugar. However, the outbound trade to Cuba is light--only some 6,000 tons, principally lumber, which Cuba needs. The main reason for this seems to lie in the lack of steamer service in recent years. Only one line operates to Cuba and does not provide many sailings. The main defect of the service however as far as Mobile is concerned is that the line is not a shipping

¹The fact that Puerto Rico is a United States possession gives the United States a virtual monopoly of Puerto Rican trade because the island comes under our tariff laws. Even so, Mobile's share of trade to tiny Puerto Rico is heavy, as indicated in the text.

²Figures furnished through courtesy of Mr. Carroll Waterman of the Waterman Line, Mobile, Alabama.

conference member, so that shippers hesitate to use it for fear of being blacklisted by conference lines.

Other trade routes.--Trade to Mediterranean Europe accounted for about 40,000 tons, equally divided between export and import. Exports consisted of iron and steel (scrap) and lumber, destined principally for Italy. Imports were almost entirely manganese ore from Poti, on the Black Sea, in Russia. Russia has the world's largest supplies of manganese, and until the war was America's chief source.

About 15,000 tons annually are shipped out to South Africa, about half to Durban and half to Lourenço Marques, a port for the Union of South Africa in Mozambique. The cargo was split about half and half between iron and steel and lumber. Semi-arid South Africa has no lumber, and needs it for her farms and cities, just as the dry plains of the United States do.

The desert of Northern Chile ships about 16,000 tons of nitrates annually to Mobile for use in fertilizer, so badly needed on the poor farm lands of the South.

The remaining overseas trade routes of any consequence are those to the Eastern Caribbean area, about 40,000 tons, almost all outbound. Iron and steel and lumber form the bulk of the cargoes. Jamaica (15,000 tons), Trinidad (10,000 tons), Curaçao, Venezuela, and the Lesser Antilles are the principle territories served.

Deep sea fishing routes.--Most of the fishing on the eastern Gulf is carried on from fishing camps or smaller points such as Bayou Labatre and Biloxi, since they are close to the inshore fishing and oystering grounds of either Mississippi Sound or the Mississippi delta islands. Mobile, at the head of Mobile Bay, is relatively so far from the inshore grounds that only a few fishermen, supplying the local market, base their boats at Mobile. Three or four companies, employing between 25 and 50 men each, operate in the local fishing business as well as some individual fishermen. In deep sea fishing, however, Mobile does play a role. One company operates ten sea going motor schooners which sail for three days across the Gulf to the Campeche Banks of Yucatan, some 500 miles away.¹ These banks are the principal source of Red

¹Courtesy of Star Fish and Oyster Company, Mobile. This is the largest seafood company in Mobile and employs about 100 men.

Snapper, a fish prized for its flavor and particularly for its keeping qualities. Other fish such as Grouper are also caught. Only 5 per cent of the catch is consumed locally, the remainder going all over the South with Atlanta, Birmingham, New Orleans, and Nashville as the leading markets. Seventy-five per cent of the fish are shipped by express, 25 per cent by truck. Mobile's good land transportation facilities make it a better headquarters for deep sea fishing than the smaller ports.

Extent of the Ocean Trade: Mobile and the Overseas World

Through the medium of its sea trade Mobile is in contact with the rest of the world. An analysis of the sea lanes leading to Mobile and their effect on the city therefore rounds out the range of areal settings treated in Chapter IV, wherein the relations of Mobile to its site, to the tributary coastal plain, to the hinterland of the port and to the South and Middle West were discussed. Just as the character of the land areas and their distance from Mobile determined in large measure the connections of these areas with Mobile, so also does the character and distance from Mobile of the ocean coasts and their hinterlands determine to a large extent the amount of trade these areas have with Mobile. Since travel on the free ocean highway of the world is so cheap, however, distance is not nearly as controlling a factor in ocean trade as it is in land trade. Thus Mobile's two most important trade routes (outside the specialized petroleum trade) normally are to Northwest Europe and the American Pacific Coast, which, though far away, have need of Mobile's products. Such long range relationships over land are impossible because of the expense of long land hauls. Only in extremely light weight or intangible items such as mail, bank clearings, news, tourists and the like do cities generally have long range connections over land. Only the very largest metropolises or specialized cities such as New York, Chicago, Washington or Miami perform such functions on a large scale.

Although a poor second to character of regions, distance from Mobile nevertheless has some effect on the city's sea trade. This is best shown by the Gulf and Caribbean trades. The oil trade, huge, but not as important as bulk alone would indicate, has already been discussed. Total trade in the remainder of the

Caribbean region is mostly outside the Gulf; it is quite heavy, running around 600,000 tons in most recent years, but the traffic is not uniformly heavy to and from all producing points. Bauxite from Dutch Guiana in 1940 accounted for about two-thirds of the total tonnage. Bananas from Central America, outbound cargoes to Puerto Rico and some inbound from Cuba comprise almost all the remaining shipments. Trade to Colombia and Venezuela is extremely light, as is trade with Cuba and Mexico, considering the nearness and importance of the latter two countries. As indicated earlier, if more services and facilities could be provided, Mobile might gain more trade in the area.¹ In the past Mobile did have greater trade with Cuba and Yucatan, trade which now goes through other channels, because of the organization of commerce at the moment. On the other hand Mobile now probably enjoys more than her share of Puerto Rican trade, because of an aggressive home steamship company operating in that trade.

Mobile's world wide marine contacts are not with all the world but are selective in character; the selection depending primarily on the needs of the areas reached or the materials they have which Mobile's hinterland requires. Distance and organization of services are secondary factors of importance in determining the trade flows.

Facilities and Features of the Port

General features.--The excellent facilities of the port were discussed in Chapter V.² The combination of modern piers, three marginal tracks and joint interchange rail yards at the Alabama State Docks makes this important part of the port one of the quickest loading and unloading ports of the world. The commodious warehouse space and transit sheds available, as well as low insurance, because of steel and concrete construction, also make it one of the most attractive storage ports. All told, the facilities are excellent, whether considered in relation to competing ports

¹See discussion of the absorption case at end of this chapter for additional reasons.

²For a detailed account of the facilities of the port see Board of Engineers for Rivers and Harbors and U. S. Maritime Commission, The Port of Mobile, Alabama (Washington: Government Printing Office, 1938).

or to the character of the trade handled. Primarily because of this excellence Mobile has become a general port as well as a bulk port; business no longer is confined to local commodities such as lumber and cotton.¹

Management of the State Docks is aggressive and the whole port is generally efficiently run, even though not as much of it is under one management, as New Orleans, where state control over most of the port results in aggressive and efficient management.

The physical condition of the harbor is excellent, as noted in Chapter III. Partly because of its excellence, partly because of its location, Mobile has been urged by some as the best site for our strongest naval base.² The Gulf of Mexico is well protected from Atlantic attack and is near potential battle zones around the Panama Canal and West Indies. The sea route south is sheltered and protected by islands. The harbor at Mobile is easily defended from the open sea, and the city is far enough away to be protected. The harbor nevertheless is easily navigated and not easily blocked, whereas New Orleans is about 120 miles up a winding river, in part of which 12 miles per hour is the top speed for vessels, thus making them easy targets for aerial bombs. Conditions often are even worse at times of high water. Mobile's 300 foot wide channel of course could also be blocked, although it would be relatively easy to dredge by-passes quickly. The rise and fall of the Mississippi (about 19 feet) and the 6 knot current at high water make floating dry docks, for the largest vessels, unfeasible at New Orleans, while the rise and fall of the river and the silt makes graving docks impracticable, although there is a naval supply base now at New Orleans.

Ship repairing and shipbuilding.--A phase of the port that deserves especial attention is ship repairing and shipbuilding. Mobile normally is the leading ship repair center of the Gulf, and in wartimes is also an important shipbuilding center. By far the largest ship repair plant is the Alabama Dry Dock and Shipbuilding Company which, even in peacetime, has about 2,000 men on its rolls.

¹See: Reports to State Legislature, Alabama State Docks Commission, Mobile, Alabama, for 1931, 1935, and 1939.

²"Gulf Coast Naval Base Needed," Marine Engineering and Shipping Review, XLV (July, 1940), 45-47.

and uses 1,200 to 1,500 workers daily.¹ At the end of 1940, 3,000 to 4,000 were employed. This is the largest industrial plant in Mobile, and has by far the largest payroll, \$2,500,000 a year in peacetime, since so much of its labor is skilled. There are also a few smaller ship and boat yards, in addition to the large Gulf Shipbuilding Corporation plant north of the city.

Mobile, like any far southern port, has a climatic advantage over northern ship repair or shipbuilding centers in winter, since most of the work is done outdoors. Painting is almost impossible in freezing weather; beams and plates likewise are hard to handle. For this reason southern ports have long had winter repair business. In recent years Mobile has secured year around business, since Mobile also has other advantages. Furthermore extreme heat on the Gulf Coast is not as likely to occur as in the north.

One of the advantages has been fairly cheap, but especially good, native labor. Part of the labor supply became available as railroads, turpentine establishments, and sawmills slowed down their operations in the 1920's. Living costs in Mobile likewise were cheap, as in most of the South.

Mobile however has additional advantages over other southern ports. Important among these is the nearness of Birmingham iron and steel and its cheap transport cost to Mobile. Most of the iron and steel used in the shipyards comes from Birmingham, normally about 70 per cent by barge, the remainder by rail. In periods when barges are busy however the percentages may be reversed. The cost of the iron and steel as a rule is about the same as on the eastern seaboard. Engines, motors, and some specialized fittings, however, come from the East, although Mobile foundries make many specialized castings.²

¹Data on Alabama Dry Docks and on shipbuilding at Mobile obtained mainly from interview with Mr. D. R. Dunlap, President, Alabama Dry Docks and Shipbuilding Company, Mobile.

²The Mobile Pulley and Machine Works, the largest foundry in Mobile (about 175 employes), started 40 years ago as a plant making stoves for lumber camps, then parts for sawmills and today it makes a variety of castings in electric furnaces for many industrial uses. Propellers and ship castings are important products and are made for Mobile and Gulf Coast shipyards, as well as for other sections of the United States and some foreign countries.

An important advantage Mobile has over New Orleans is its better harbor. The Mississippi provides a poor site for dry docks, as was pointed out above. Furthermore a vessel in distress can limp into the currentless, easily accessible harbor of Mobile easier than it can stem the swift Mississippi current to New Orleans. Mobile is also considered a good place to lay up a vessel, since the fresh water causes barnacles to drop off in three weeks.¹

In ship repairing Mobile has an advantage over smaller Gulf ports in that it is the terminal port for some vessels. Ships seldom are overhauled while making a call on a voyage. The Waterman Line in Mobile, for example, often employs several hundred workers for minor repairs and alterations on its ships. For larger repairs the Mobile ship repair plants are used. Furthermore Mobile is near New Orleans, from which it secures business because of the inadequacy of New Orleans repair facilities. Tampa and Galveston are not considered as good sites for repair--Tampa because it is only a port of call--Galveston because it does not have so many ships passing close to it as does Mobile. However, approximately 80 per cent of the ships repaired at Mobile come for repair only, whereas New Orleans repair business is confined to ships already there. Because of New Orleans' large size this still gives that city considerable repair work.

Finally skillful management has capitalized on Mobile's advantages to build up a large, well equipped repair plant staffed by skilled workers. The size and renown of the Mobile plant draws still more repair work and maintains the prestige of Mobile in the ship repair business.

In shipbuilding Mobile has about the same advantages as in ship repairing. Labor and materials form approximately equal proportions in the cost of shipbuilding, and in each Mobile has advantages, as shown above. In addition to the already established Alabama Dry Docks, the large Gulf Shipbuilding Corporation plant was established at Chickasaw, in 1940, at the old yards built by the Tennessee Coal and Iron Company in 1917-18. Cargo ships and destroyers are under construction.

¹Interview with Captain Smith, harbormaster, Mobile.

Intracoastal and Inland Waterway Trade

In addition to ocean trade, Mobile has a large volume of water trade via intracoastal waterways along the Gulf Coast, and inland waterways up the channelized Tombigbee, Alabama, and Black Warrior Rivers. Although this trade is water-borne, it is treated separately because the commerce resembles land trade more than ocean trade. This is particularly true of the river trade and applies to much of the local intracoastal movements. In the last few years, however, isolated sections of the Intracoastal Canal have been linked together to form a through route from Galveston Bay, Texas, to Port St. Joe in North Florida, on which barges move in competition with steamships on the open Gulf.

Intracoastal Canal

The controlling depth on the Gulf Intracoastal Canal is nine feet. Small boats and barges towed by tugs move over the waterway. In most places the route is protected from the open Gulf, since it is either a canal, or a channel dredged through lagoons behind barrier beaches. In a few places however it is somewhat exposed, particularly in Mississippi Sound, between Mobile Bay and the Mississippi River. Here the offshore barrier islands are not joined to form a complete barrier to waves as is the case on most of the north Florida or Texas Coast.

The Mississippi Sound route along the coast from Mobile Bay to Lake Ponchartrain opposite New Orleans has long been in use. Formerly, in pre-Civil War days, steamers went from Mobile Bay to Mississippi Sound via Grant's Pass, a toll waterway dredged between Dauphin Island and the mainland (now paralleled and superseded by a free government channel completed in 1929), and proceeded down the Sound to Lake Ponchartrain where a seven mile long railway led to nearby New Orleans. The route eastward to Pensacola leads through miles of canals connecting shallow bays and lagoons and was finished only in 1933.

Traffic on Mississippi Sound is heavy, as Figure 14 shows, and is slightly greater westbound than eastbound.¹ About 48 per

¹Statistics from "Commercial Statistics, Mobile, Alabama, 1938." Where other figures are mentioned they have been secured from other annual reports in the same series. Exact figures are

cent of the westbound movement consists of limestone and shale, going to New Orleans cement plants, primarily from the bluffs on the Tombigbee River near St. Stephens about 50 miles north of Mobile. Sand is the next heaviest movement, but is even less valuable than limestone, accounting for only about one-fiftieth of the total value in 1936.¹ The most valuable large movement in 1936 was the 37,000 tons of iron and steel, mostly pig iron, moving from Port Birmingham to New Orleans and Texas. This movement had a value of almost \$1,000,000, about one-sixth the total value carried westbound. In 1938 only 25,000 tons were carried, but its value was probably still the greatest. Lumber and logs, oysters and oyster shells, canned goods, watermelons (from southern Mobile county to New Orleans) and beer containers are the most important cargoes in a fairly diversified trade.

The heaviest eastbound movement is in petroleum products, amounting to about one-fifth the total eastbound volume in 1938, and about one-half in 1940.² Sugar from New Orleans refineries to Mobile and Birmingham is second. In 1936, and probably in 1938, sugar accounted for about one-third the total eastbound value. Oysters move in the same quantity as sugar, although their value in 1936 was only \$559,000 as compared to \$7,500,000 for sugar, and their haul was only about half as long. Coffee and tea, canned goods and a variety of food products are also important, as is crude rubber, though these commodities trail far behind petroleum, sugar, and oysters.

not quoted because not all of the traffic is through (in spite of the designations used in the reports). The author made the traffic flow map through personal knowledge of the source of many of the commodities, as well as by taking into account internal traffic figures for Pascagoula, Biloxi, and Gulfport; after subtracting inland waterway traffic (as at Pascagoula), most of the remainder of local internal traffic was deducted from the through figures for the Intracoastal Waterway to Mobile, since most of the local traffic moved westward toward New Orleans. The total 1938 tonnage figures are about 20 per cent greater than those for 1936 and 15 per cent greater than for 1937; value figures for 1938 are about 10 per cent greater than for 1936.

¹Furthermore, sand probably does not move the entire length of the waterway, even though it is included in through traffic westbound. Value comparisons for individual commodities are on the basis of 1936, since value for individual commodities was not reported in 1938.

²In 1940 463,000 tons of gasoline alone were hauled, in contrast to 106,000 tons of gasoline in 1938.

The volume of trade handled on the Mobile Bay-Pensacola section of the Intracoastal Waterway in 1938 was only about one-fifth as much as on Mississippi Sound although by 1940 it had increased to almost one-half. Eastbound movement in 1938 was almost three times westbound, by 1940 it had increased to seven times the westbound trade. Petroleum products made up one-half the eastbound traffic, pulpwood most of the westbound.

Intracoastal Waterway traffic is largely in bulky, low value commodities. In 1936, for example, on the two sections of the waterway discussed above, bulk freight amounted to about 754,000 tons, but, in value, package freight was worth \$27,175,000 in contrast to only \$4,551,000 for all bulk freight. Package freight therefore is not unimportant on the waterway.

In assessing the importance of the waterway to Mobile, it should be remembered that only slightly over half the intracoastal traffic terminates or originates in Mobile; almost half is through traffic passing Mobile en route to or from the rivers north of the city.¹ The Intracoastal Waterway provides a link in a through route between the metropolises of Birmingham and New Orleans as well as other points. Mobile nevertheless probably gains more from the waterway than it loses, in spite of losing some trans-shipment business to it. The waterway is gaining traffic steadily and should become even more important as a transport route along the Gulf. Already it handles more of the important Gulf coastal traffic than either the high seas (with the exception of petroleum from Texas) or the railways.

Inland Waterways

Even more important to Mobile than the Intracoastal Waterway are the rivers leading to Mobile, although today the total

¹River traffic is reported as downbound, and upbound or inbound and outbound. The latter categories represent traffic to or from other waterways. The amount belonging to the Intracoastal Waterway is the remainder after Alabama River traffic has been subtracted from the Black Warrior, Warrior and Tombigbee inbound and outbound traffic. Alabama River traffic is reported similarly in another table and thus can be subtracted. A check on this subtraction and the direction of movement can be made by tracing individual commodities. The proportion belonging to the Pensacola and Mississippi Sound portions of the waterway can be determined with close accuracy by tracing movements of individual commodities, such as iron and steel, limestone, sugar, petroleum, and so forth.

volume handled is not much greater than on the Intracoastal Waterway. The rivers, as was shown in Chapter II have long been important to Mobile, and because of their long use have been important factors in shaping the character of the city.

During the last fifty years and more the rivers have been under improvement, so that today there is an 8 foot channel to Port Birmingham, near Birmingham on the Black Warrior River. The waterway up the Tombigbee, Warrior and Black Warrior River is today the deepest and most used. The upper Tombigbee (to Walkers Bridge, near Columbus, Mississippi) has only 1 foot depth at low water, 5 at high water and is virtually unused. Likewise the Alabama has only 3.5 feet of water to Montgomery (3 feet to Wetumpka, the head of navigation a few miles beyond), and is little used, save in its southernmost part, where lumber and logs are handled. A series of dams and locks makes the Warrior and Black Warrior navigable. New dams and larger locks are being built to cut down the number of lockings and to do away with the necessity of breaking tows to go through small locks. Still more super dams and large locks are proposed for the future to increase the efficiency of the route.

Towboats and barges have driven all the packet steamers off the river since they have been found more efficient. Some of the barges are seagoing, so that they can be hauled on the open Gulf.¹ Two lines handle most of the business: the Federal Barge Lines and the private equipment of the Tennessee Coal and Iron Company of Birmingham.

Down stream traffic at Mobile is about four times as great as upstream traffic (approximately 1,200,000 tons down, 315,000 tons up). About one-third of the southbound traffic continues on to the Intracoastal Waterway, as indicated earlier. At Mobile the most important receipts are about equally divided between lumber and logs and iron and steel products (each about 230,000 tons). The forest products come mostly from within a hundred mile distance upstream--a fifty mile stretch on Mobile River, and addi-

¹See: John H. Goff, "Development of Transportation on the Lower Alabama Rivers," Alabama Economic Review, II, No. 1 (Auburn: Alabama Polytechnic Institute, 1931), 20-24, and "Technical and Engineering Improvements Contributing to the Development of Transportation on Lower Alabama Rivers," Alabama Economic Review, II (1931), No. 2, 19-24.

tional fifty mile reaches up the Alabama and Tombigbee Rivers from their junction with the Mobile River. Additional log movements are carried on to other centers along the rivers. Iron and steel on the other hand come all the way from Port Birmingham. Considerable sand and gravel is hauled locally and small amounts of a variety of other products are also carried. In 1938 very little coal was hauled to Mobile, partly because the waterway does not directly tap many coal mines. Coal operators hope that the waterway will be extended up some minor tributaries to their mines so that more coal can be shipped. Railroads handle most of the coal now at low rates, although the volume moving on the river has been increasing in recent years, partly because of the renovation of coal unloading facilities at Mobile.

Petroleum products make up more than half the northbound traffic, with manganese ore, sugar, canned goods and chemicals the most important other commodities.

Bulk cargoes are most important on the rivers, as they are on the Intracoastal Waterway. On the Black Warrior, Warrior and Tombigbee Rivers in 1936, 1,289,194 tons of bulk freight valued at \$20,516,819 were carried in comparison with 134,099 tons of package freight valued at \$13,966,172; 206,319 tons of the bulk freight was in rafted and floated timber. In 1940 the same ratio held. The products carried however are important, and give these streams an importance which many improved waterways of the United States, handling only low value products, do not have.

Railroads

For more than fifty years railroads have been Mobile's most important land transport arteries. Today the railroads still handle more inland traffic than the waterways and highways combined, although the latter are gaining on the railroads and furnish formidable competition--the waterways primarily for cheap, bulky cargoes, the highways for higher value, or shorter haul commodities. The railroads still carry some passengers, while the inland waterways carry practically none. The motor car however handles most of the passenger traffic. Railroads are primarily freight haulers, and since they penetrate all important points in the back country, provide a more complete service than the limited waterways. The railroads even compete directly with waterway and

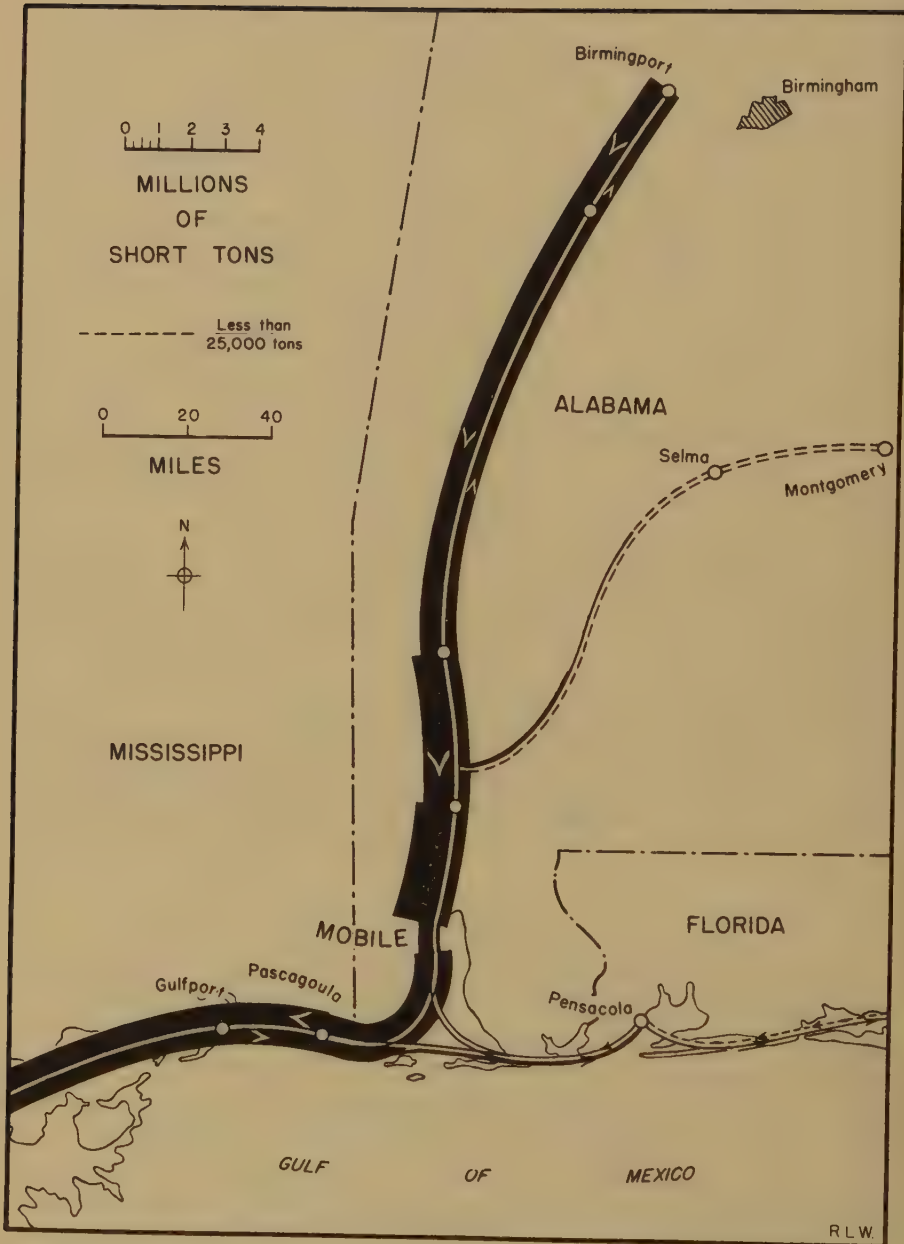


Fig. 14.--Inland and Intracoastal Waterway traffic density in Alabama and central Gulf coast, 1938. Compare this map with Figs. 15, 16, and 17 which are drawn on the same map and tonnage scales.

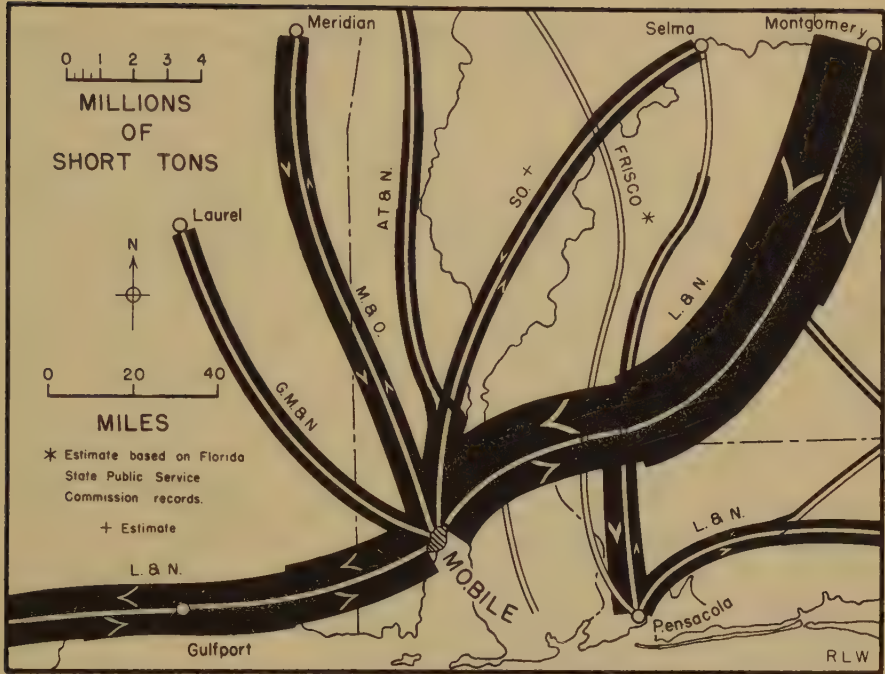


Fig. 15.--Railroad traffic density in Mobile tributary area and vicinity, 1938. Compare with Figs. 14, 16, and 17, drawn on same tonnage and map scales.

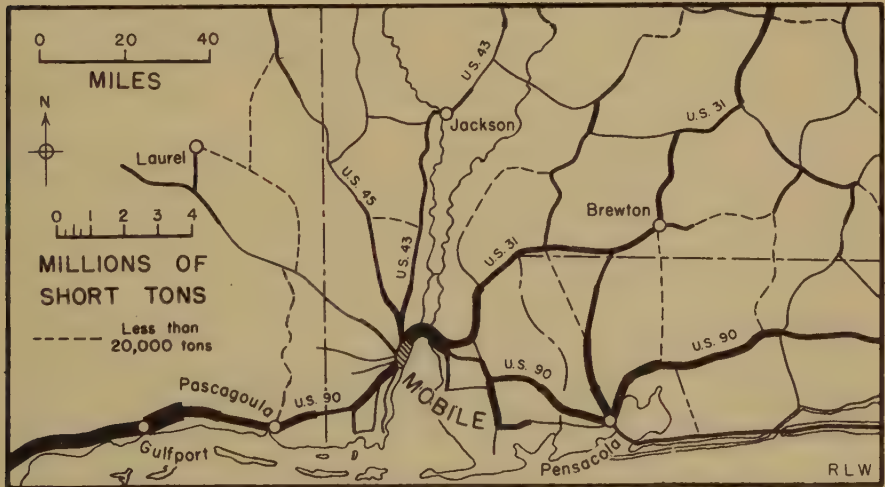


Fig. 16.--Highway traffic density in Mobile tributary area and vicinity, 1938. Compare with Figs. 14, 15, and 17, drawn on same tonnage and map scales.

highway and strive quite successfully to hold traffic in all commodities.

Railroad Routes and Traffic

The Louisville and Nashville Railroad.--The most important rail route running through Mobile is the Louisville and Nashville trunk line which runs from Ohio River points through Birmingham and Montgomery (where the main passenger line from New York to New Orleans connects with it), to Mobile, and on to a terminus at New Orleans (Figs. 1 and 15). Although it is an important trunk line, it is only single tracked in its southern portions, as are all the railroads leading to Mobile. One reason for the Louisville and Nashville's importance to Mobile is that it is the only road entering the city from east of the rivers, while four lines (of three companies) enter Mobile from the west, in addition to the coast line of the Louisville and Nashville from New Orleans. Bridging the delta of the Mobile River was costly and discouraged construction of railways east of Mobile.

In 1938 southbound traffic density on the Louisville and Nashville north of Mobile was about 1,340,000 tons; approximately 540,000 tons terminated in Mobile, and the remainder, plus about 40,000 tons picked up in Mobile, continued southbound toward New Orleans.¹ Northbound traffic density south of Mobile was about 680,000 tons, with approximately 70,000 tons dropped off at Mobile and about 220,000 tons loaded there to give a traffic density of about 830,000 tons northbound.

Approximately 90 per cent of the Mobile traffic on the Louisville and Nashville comes from or goes to the interior. Coastal points such as New Orleans or Pensacola are competing ports, not generators of traffic for Mobile.

The principal commodities carried into Mobile are forest products--lumber, logs, pulpwood, and naval stores--which together account for about 40 per cent of the inbound traffic. Lumber comes from within a 150 mile radius, while cheaper pulpwood is confined to a 60 mile distance. Coal follows in tonnage; it comes

¹Figures furnished through courtesy of the Louisville and Nashville Railroad, Mobile figures by Mr. Hoyt W. Lee, general freight agent at Mobile for the Louisville and Nashville Railroad. (See Table 6, later in this chapter for figures on Mobile freight traffic for all rail lines.)

from the Birmingham area and most of it is probably used by the railroad itself. Third is iron and steel from Birmingham and vicinity, which accounts for about 20 per cent of the total inbound movement. Cotton, largely from the eastern Black Belt is another important item. A diversified list of commodities comprising about 100 items, makes up the balance of the inbound traffic. Diversity of inbound movement is much greater than outbound, reflecting the great number of manufactured and other type products needed in a city; these products are shipped in from specialized parts of the country, particularly the industrial northeast.

The principal outbound movement is petroleum and its products--about 60 per cent of the total outbound trade. The petroleum goes mainly to North Alabama and Tennessee. Next most important is fertilizer and fertilizer materials, destined for the southeast, anywhere from 40 to 500 miles away. Paper products, headed for all of eastern and central United States, are third. Bananas, to the Southeast and Middle West, manufactured roofing,¹ sent up to 400 miles away, and alumina (ore concentrates) destined for Alcoa, Tennessee and Badin, North Carolina, are remaining important items.

The Louisville and Nashville has extensive yards and facilities in Mobile as indicated in Chapter V and is an important employer of labor in Mobile as well as a hauler of freight and passengers. It is a division point where all crews and engines change. In the last few years the L. and N., in common with many railroads, has been running its engines long distances without changing at division points. Thus on through passenger trains from the North engines are customarily run through from Cincinnati to Mobile, and on freight trains from Birmingham to Mobile. The engines are not run through to New Orleans because the numerous bridges and causeways on the shore line from Mobile to New Orleans cannot support the heavy engines used in the interior. In addition the route is more nearly level from Mobile to New Orleans than from Mobile northward, and therefore does not require such heavy engines. If the foregoing reasons were strictly controlling,

¹The Continental Roofing Mills (Ruberoid Company) makes asphaltic and asbestos shingles and sidings in a plant employing about 250 workers. The product is sent all over the South, the asphalt and asbestos comes in by ship and by Intracoastal Waterway barges.

one might expect the engine transfer to be made on the east side of Mobile River, since thirteen-and-one-half miles of bridges and causeways cross the delta virtually at sea level. The absence of any large town on the east side prevented this, since no trains stopped there, while all trains stopped at Mobile, to change crews and drop or add cars. East side engine transfer would have slowed schedules and necessitated construction of yards and workmen's homes. As it is, trains proceed slowly across the bridges over Mobile delta.

Gulf Mobile and Ohio Railroad.--The second most important railroad to Mobile is made up of the two lines, leading north and northwesterly, of the Gulf Mobile and Ohio Railroad. Before 1940 the two lines were separate companies..

The older and more important of the two lines is the old Mobile and Ohio Railroad, whose history was discussed in Chapter II. In 1938 this road had a traffic density of 630,000 tons inbound and 280,000 tons outbound from Mobile, and since Mobile is its terminus, all this traffic was Mobile traffic.¹ Forest products, from a 150 mile radius, normally form the most important inbound tonnage. In 1938 over 290,000 tons of corn were shipped out of Mobile, practically all of which came over the Mobile and Ohio, since it controls the one grain elevator at Mobile and extends into the corn belt at St. Louis, its northern terminal. This heavy corn movement is abnormal; therefore the total inbound tonnage at Mobile should probably be reduced to at least 500,000 tons, and is so shown on the map (Fig. 15) to make the figures compare approximately with the other railroads. Some coal and iron and steel are also shipped in, but in much smaller volume than on the Louisville and Nashville, since the Mobile and Ohio has access to Birmingham through connecting lines only. Cotton, primarily from the Mississippi Black Belt, is normally the second most important commodity carried in.

Outbound movement is small and includes bananas, petroleum, fertilizer materials and paper. Bananas constitute almost one-third the outbound tonnage. The Mobile and Ohio has specialized in bananas for the last forty years and has direct connections

¹Figures for the Mobile and Ohio Railroad furnished through courtesy of Mr. G. P. Brock, General Manager, Gulf, Mobile and Northern Railroad in 1939.

with the banana wharves in Mobile. The refrigerated banana trains operate on schedule and the tendency is to concentrate enough business on one railroad so that complete trains can be run. Many of the banana cars are routed to the Illinois Central at Cairo, Illinois.

The old Gulf, Mobile and Northern line parallels the old Mobile and Ohio a few miles west and ties a strip of eastern Mississippi to Mobile. Mobile traffic on this line is light, about 270,000 tons inbound, 290,000 tons outbound.¹ Forest products are most important inbound, since the Mobile section of this road serves forest areas almost entirely. Outbound tonnage has considerable diversity, due in part to the aggressive policy of the road's management.

For a few years this road operated its own trains, from its northern terminus at Jackson, Tennessee, over the Illinois Central tracks to Paducah, Kentucky, where connection was made with the Burlington Railroad. The G.M. and N. and the Burlington were closely linked, thus giving each line a connection between north and south. The Illinois Central broke the operation agreement July 19, 1938, and arrangements were made to transfer traffic to the Mobile and Ohio, for movement to St. Louis, where connection was made with the Burlington and other midwestern lines.

The Gulf, Mobile and Ohio Railroad is extremely important to Mobile, not only as a freight hauler, but also because Mobile is its terminus and home office. Prior to consolidation, the Mobile and Ohio had two offices, one at Mobile, one at St. Louis. The latter was the head office, although the road had many employees in Mobile because its accounting offices were there, since considerable office space was available in the terminal at Mobile. The main shops of the Mobile and Ohio were at Jackson, Tennessee, where they had been moved, from Whistler (just north of Mobile) some years before. Prior to that time Whistler had had the main shops, but Jackson, near the middle of the line, was a more conveniently reached location for the whole system. The G.M. and N. however had some shops in Mobile, as well as its home office. Since consolidation the main offices for the combined railroad have been established at Mobile in a new office building, although

¹Traffic density figures secured from Gulf, Mobile and Northern Railway, Mobile, Alabama.

most shops still remain at Jackson.

The Southern Railway.--The volume of traffic on the Southern is not known exactly, but is probably less than on the old Gulf, Mobile and Northern, in the neighborhood of 250,000 tons each way. Since the Southern is the short line from Birmingham to Mobile, it hauls iron and steel, and coal into the city, as well as some forest products, brick and lime, and a little cotton. Outbound tonnage resembles that of the other roads, except that it is known that the Southern has more alumina outbound than the other lines. The Aluminum Company plant at Alcoa, Tennessee, is served directly by its tracks. Petroleum, paper, molasses, fertilizer, and manganese ore are other principal outbound shipments.¹

The Southern has some terminal facilities at Mobile (primarily jointly with the Mobile and Ohio). Mobile however is not its home office, nor even an important division point, so that the road is less important to Mobile as an employer of labor than any other line coming into the city.

Alabama, Tennessee, and Northern Railroad.--The line with the smallest traffic density leading into Mobile is the Alabama, Tennessee, and Northern, which runs 220 miles northward through western Alabama. At Mobile the 1938 density was about 220,000 tons inbound, 170,000 tons outbound, with slightly heavier density a few miles north of Mobile in the vicinity of large sawmills.² Since most of its track is in forest area, forest products are the most important commodities handled. However some through traffic is secured through connections with the Frisco at Aliceville and the Southern at York, Alabama. These lines provide connections with Memphis and Birmingham. At the latter point some iron and steel is secured. The Frisco and the A.T. and N. have an operating agreement, so that the A.T. and N. gets most of the Frisco's Mobile business, and vice versa.

Although only a short line, the A.T. and N. has its main offices and shops in Mobile and employs more Mobile labor than

¹Courtesy of Mr. R. L. Butt, Assistant Freight Manager, Southern Railway, Mobile, Alabama. Exact figures could not be released by the local office, and the main office did not reply to requests for information.

²Traffic density figures furnished through courtesy of Mr. E. C. Ash, Assistant Traffic Manager, Alabama, Tennessee and Northern Railroad, Mobile, Alabama.

the Southern, although probably less than the L. and N.

General Factors Affecting Railroad Traffic Routes

The railroads leading to Mobile serve primarily as links on joint land sea-routes. With only one exception (paper), the principal items carried represent the land hauls of products moving in one form or another through the port of Mobile. Only a part of the outbound paper moves by all rail; some paper also moves by sea, depending on its destination. Primarily in the small remainder of diversified items are the needs of the population of Mobile itself represented.

The routes that the rail trade of Mobile follows are influenced in large part by the facilities available from producing areas or to consuming districts. This is especially true in such commodities as forest products and cotton, which are produced fairly close to Mobile, and move over the route closest to them. For some other commodities, however, which come from or go to distant points, or points served by more than one rail line, a variety of routes are open, either to Mobile, or to other Gulf ports. Here the type of service, depending on the excellence of train schedules, aggressiveness of the railroad management or policy of the company, influences the amount moving.

The Louisville and Nashville, for example, has by far the best roadbed and track through Mobile, over which it operates many fast passenger trains, primarily because it is a trunk line connecting major centers of the South. The L. and N. however serves Pensacola, Mobile and New Orleans and claims to pursue a policy of treating each port equally, so that all of its business does not go to Mobile. In fact Mobile has claimed in the past that the L. and N. favored Pensacola since the L. and N. was the only railroad serving that city and therefore wanted to build up trade at a non-competitive port. Mobile has so much more trade than Pensacola that such a policy, even if it were pursued, probably would not shift much trade. Earlier we have seen how some Mobilians feared that New Orleans would be favored, since it was the terminus. The most recent protest, however, has been from New Orleans to the effect that it felt the L. and N. was discriminating against it in favor of Mobile. The L. and N. however answered that they believed the system of rates involved "gives recognition

to the geographical location of the several ports and the service involved results in equitable and just treatment of our patrons located at all the ports which we serve."¹

The line now owned by the Southern Railway was initially built to give Mobile a short line to Birmingham. In spite of its shortness, however, this railroad is in much poorer condition than the larger L. and N., primarily because it is not a main line. The main line of the Southern runs from Birmingham directly to New Orleans via Meridian, and the Mobile line is merely a branch and is not regarded as part of the Southern Railway's main Gulf outlet.

The M. and O. initially was built to serve Mobile and served it well. In recent years, however, it had become bankrupt and deteriorated greatly, so that it was not a first class railroad. A general lack of aggressiveness seemed to characterize the management and traffic was light. The G.M. and N. Railway, on the other hand, was a poor line linking small centers, but its management was efficient and aggressive, so that the road made some money. The merger of the M. and O. and the G.M. and N. now gives Mobile a strong line which should get Mobile more business in the long run.

Highways

Highways are becoming increasingly important carriers of trade to Mobile, but as yet do not compare in importance with railways. In 1937 total freight traffic density on railways leading to Mobile was approximately four to five times as great as on highways. Practically all of this traffic terminated or originated in Mobile, as was the case with most of the highway traffic. On the other hand, passenger traffic density on highways several miles outside Mobile and suburbs was at least ten to fifteen times as great as on railways.² Furthermore, over two-thirds of this pas-

¹Letter from Addison R. Smith, Vice President, Louisville and Nashville Railroad, to members of the New Orleans Association of Commerce, Louisville, December 6, 1938.

²Approximation arrived at by counting the number of cars on highways (as reported by State Highway traffic counts), multiplying this figure by average number of passengers per car, and comparing this total with the estimated number of passengers per car on trains at Mobile.

senger traffic was destined for Mobile, while only a small fraction of the rail passengers represented Mobile business.

The most important single route into Mobile is over Cochrane Bridge (and tunnel under Mobile River, since 1941). Since this causeway is the only connection between Mobile and the east, it is natural that it should have the greatest traffic, since four through highways and a number of minor roads enter Mobile on the west side of the river. Before Cochrane Bridge was opened in June 1927, Mobile's only link across the bay was provided by expensive ferries. Very few cars passed over the bay. In 1928, 204,981 automobiles passed over Cochrane Bridge, paying high toll (\$1.00). In 1936, 320,221 cars paid the toll; in 1938, the first complete year of toll free operation after the state bought and freed the bridge on March 10, 1937, an estimated 771,000 cars crossed, and in 1940, 1,100,000.¹ In most years since its opening Cochrane Bridge traffic has increased more rapidly than either gasoline consumption or automobile registration in Alabama. This has been particularly true since the bridge was freed of tolls (approximately 17 per cent annual increase in bridge traffic; approximately 4 per cent increase in gasoline consumption).² The bridge generated and diverted traffic to Mobile and tied the Eastern Shore area of Mobile Bay to the city, as was noted in Chapter IV.

Three paved roads with approximately equal volume of traffic fan out from the eastern end of the bridge (Fig. 16).³ South along the bay shore is the local road to Fairhope and Eastern Shore resorts. Heading southeasterly is U.S. 90 (Old Spanish Trail) which extends through Pensacola and connects, en route, with highways into the southern Baldwin County truck district. Running northeasterly is U.S. 31 to Montgomery and points east. This is an important through road which formerly had most of the north-south traffic in Alabama as well as traffic to the important Northeast. However the recent (1941) completion of hard surfacing on a direct route from Mobile to Birmingham, west of the Alabama

¹Coverdale and Colpitts, op. cit., p. 19.

²Ibid., p. 18.

³See Table 6 later in this chapter for figures on Mobile freight density on all highways.

River, has diverted some of the through Mobile-Birmingham traffic. Route 31 however is still an important artery for other business.

Figures on traffic origin and destination, direction, or commodities hauled are not generally available for all the roads leading to Mobile. On Cochrane Bridge, however, some sample checks have been made which give a clue to the composition of the traffic. In 1940 approximately two-thirds of the bridge traffic originated or terminated in Mobile and suburbs.¹ On the basis of some smaller, but more detailed samples in 1938 and 1939 it was found that over 90 per cent of the passenger trips originating or terminating in Mobile came from or went to places less than 75 miles away in Alabama and Florida.² Fairhope and the shore towns nearby were the most important, followed closely by Pensacola, with Foley and the truck district around it third. Bay Minette, Atmore-Brewton and Montgomery were other originating or terminating towns reported by a fairly large number of cars.

Commodity statistics are even more fragmentary, but according to the sample just described, most Mobile truck traffic is confined to an even shorter radius from Mobile than passenger movements. Lumber and logs and naval stores were the two most important commodities moving into Mobile. Animals (chiefly hogs), some cotton, fruit and fish were other products, as well as a small amount of miscellaneous shipments. Finished food products were the most important outbound shipments. This was largely wholesale grocery trade. Gasoline and oil, and small lots of miscellaneous products accounted for the remainder of outbound traffic.

On the west side of the bay the two most important routes are U.S. 90, the continuation of the Gulf coastal route to New Orleans, and U.S. 43, leading north. U.S. 43 leads into Alabama 5, recently hard surfaced, and provides a new short route to Birming-

¹From a 4 day sample of 12,243 cars in May, 1940 reported in Coverdale and Colpitts, op. cit., p. 9.

²Percentages derived from compilation by author of raw traffic data in "Trip Classification Reports of Cochrane Bridge Special Study," secured from Statewide Highway Planning Survey, State Highway Department, Montgomery, Alabama. The writer is especially grateful to Mr. W. O. Dobbins, of the Alabama State Highway Department for allowing access to materials and giving assistance in their interpretation.

ham (about 247 miles as compared to 309 miles on U.S. 31, via Montgomery). In addition U.S. 43 provides access to territory directly north of Mobile, where Mobile has important wholesale and other business. U.S. 45 follows the line of the M. and O. Railroad north and northwest from Mobile into eastern Mississippi. The completion of paving in Mississippi makes this a good through route to the north, but there is less Mobile business tapped by this road than by U.S. 43 (cf. Fig. 7). The remaining through, hard surfaced, road is Alabama 42, leading northwesterly to Lucedale, Laurel and Hattiesburg in Mississippi. Population and traffic are sparse in the countryside tapped by this road. County roads, paved for some distance, lead west and south from Mobile and pick up some nearby traffic.

Good, through road construction to Mobile has, until recently, lagged behind that for most cities of comparable size in the country. This is particularly true of connections northward. Only in the last few years have Routes 43 and 45 been paved. Mobile still feels that better access to the hinterland directly north in Alabama is needed, and plans to have the state build a highway. Although this strip of country is poor and is partly served by rail (A.T. and N.), a new road should help Mobile to reach potential tributary area and to make better connections with north Alabama.

Although exact figures are not available, it appears that the percentage of total freight moving to or from Mobile on highways is less than in most other cities of the country. The relative excellence of rail and water transport and the fact that the highways are only fair, are partial explanations. The poorness of the nearby surrounding territory is also a contributing factor, since the usual limit of intensive trucking is 150 miles, of extensive trucking about 300 miles, although longer runs are also made, but not in volume. A rough estimate of the amount of freight handled by truck at Mobile in 1940 was 1,260,000 tons.¹ This is

¹Statement of David Knapp, Jr., Director of Mobile Traffic Association. Details of the estimated movements are:

Hauled by	Common Carrier	14,000,000 lbs., monthly		
" "	Private "	4,000,000 "	"	"
" "	Contract "	2,000,000 "	"	"
" "	Irregular "	1,000,000 "	"	"

This figure for 1940 correlates fairly well with the author's esti-

about one-third of the railroad tonnage and only slightly less than Inland and Intracoastal Waterways combined. Inbound movement is about three-fourths of the total, reflecting the movement of heavy, bulky commodities to a city. Approximately one-fourth of the total trade is to or from the port. Port tonnage is heavy in bulky commodities, as we have seen, and much of it moves some distance. Therefore trucks move much less of the port trade than do railways or waterways.

Electricity and Natural Gas

In addition to goods and people moving into and out of Mobile, gas and electricity are also brought into the city and contribute to its support. In order to compare the importance of these movements they have been converted to their equivalents in tons of coal and are so shown on the flow map (Fig. 17). If natural gas and electricity were not brought into the city, coal, brought by other forms of transport, would be the chief source of the heat and power represented.

Electricity

Electricity used at Mobile comes over two long distance lines--one from Mitchell Dam, on the Coosa River, about forty miles north of Montgomery, the other from Jordan Dam on the same river about twenty miles north of Montgomery (Fig. 17). These dams are a few miles north of the Black Belt, in the rapids of the Coosa just north of the Fall Line where the river flows through the hard rocks of the southernmost Appalachian formations. South of this line the sandy coastal plain does not provide enough relief for suitable water power sites. To find water power it is necessary, therefore, to go about two hundred miles from Mobile. Since the economical limit of electrical transmission is about three hundred miles, the distance to the dams is not too great.

In addition to the hydro-electric dams, there are also standby steam plants at Mobile. These are old plants which served

mate of 830,000 tons in 1938, as explained on p. 150 of this chapter, since truck business has been increasing at a more rapid rate than trade on other forms of transportation at Mobile, and total business at Mobile has been increasing tremendously in the last two years.

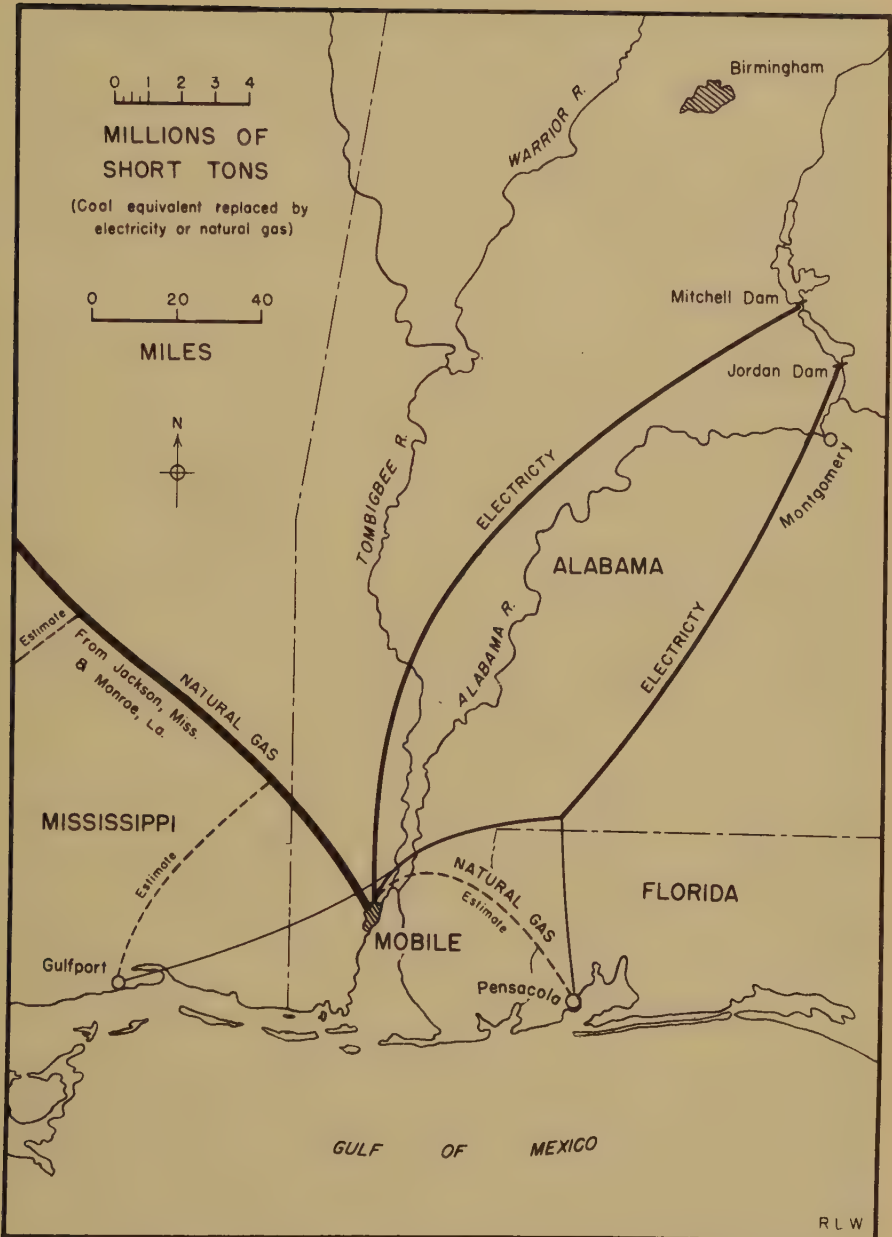


Fig. 17.--Electricity and natural gas flow in equivalent tons of coal replaced, 1938, in Mobile tributary area and vicinity. Compare with Figs. 14, 15, and 16, drawn on same tonnage and map scales.

Mobile before 1926, when the high tension lines were built. A new carbo-electric plant is being built at Mobile to take care of increased demands. Recent advances in efficiency of such plants make their use more economical under some conditions than hydro-electric plants. Coal will be brought down the rivers to the plant at riverside north of Mobile and will be quite cheap. On the other hand the most easily exploited water power sites have already been used, so that expansion in hydro sources would be more costly than previous construction.

If the total kilowatt hours of electricity delivered to Mobile in a year are multiplied by the pounds of coal needed to produce one kwh., the amount of coal replaced by the high tension lines can be obtained. Although the new steam plant at Mobile is expected to produce 1 kwh. of electricity from one pound of coal, the old plants used 1.5 lbs. per kwh.¹ Multiplying the 250,000,000 kwh. delivered at Mobile in a year by 1.5 lbs., gives a figure of about 180,000 tons of coal, the amount replaced by the high tension lines. This amount is equal to the tonnage carried by a fairly important branch line railroad, but is only about one quarter the volume of freight brought into Mobile from the north on the Louisville and Nashville main line.²

In addition to supplying the city with power, the Alabama Power Company is active in attempting to draw new industries to Mobile, and has been so effective in pointing out Mobile's advantages, that it has been instrumental in causing some new industries to locate in the city. The Alabama Power Company naturally wants to develop southern Alabama, since competition from TVA and its super dams is so intense in North Alabama.

Natural Gas

Natural gas comes to Mobile through a pipe line, built in 1925, which leads from gas fields in northeastern Louisiana and central Mississippi (Fig. 17). The availability of this cheap gas enables Mobile to offset partially the competition of Gulf

¹All data furnished by courtesy of the Alabama Power Company, Mobile, Alabama.

²This equivalent nevertheless represents more than the total tons of cotton ever shipped in a year from the Black Belt to Mobile.

points farther west with their still cheaper gas, and gives Mobile an advantage over points east of Pensacola on the Gulf coast, since none of them have natural gas.¹ Some industries, particularly the alumina plant, are large consumers of gas and the presence of natural gas was a factor influencing their location in Mobile. The capacity of the gas line is 35,000,000 cubic feet a day, with a rating of 960 B.T.U.'s per cubic foot. If one assumes that the pipe line was used at only slightly more than 50 per cent of capacity in 1938, the gas carried would have replaced at least 200,000 tons of coal a year.² This represents therefore the equivalent of a fairly heavy movement into Mobile.

Balance of Trade and Mobile's Transport Position

Total Movement of Traffic in and out of Mobile

What is the complete picture of traffic flow in and out of Mobile? What exactly are Mobile's connections with the rest of the earth? No more fundamental questions could be asked in a study of this port city. If "cities are born of trade," what precisely is the trade that supports a city? In terms of tonnage, answers are provided for Mobile by Tables 6 and 7.

Table 6 summarizes net inbound, outbound, and total movements by all forms of transportation, individually and collectively, and thus gives the total commerce at Mobile as well as the balance of trade. All significant carriers of goods are listed, even pipe lines and high tension lines, in which cases the equivalent in tons of coal import replaced by these utilities is used as a quantitative figure. Not included is mail, express and bag-

¹In 1939 industrial rates ranged from .30 per 1,000 cubic feet per month for the first 250,000 cubic feet to .18 per 1,000 cubic feet per month for all consumption over 5,000,000 cubic feet. Commercial and residential rates were considerably higher, although commercial uses in amounts over 1,000,000 to 2,000,000 cubic feet (depending on type used) cost only .25 per 1,000 cubic feet per month (Mobile Chamber of Commerce, 1939).

²This figure is based on the production of about 31,960 cubic feet of gas from one ton of coal, the average in America in 1929, when 1,918 billion cubic feet of natural gas used industrially was estimated to be the equivalent of about 60 million tons of coal (W. A. Bone and G. W. Himus, Coal--Its Constitution and Uses [London: Longmans, Green and Co., 1936], p. 22).

TABLE 6

INBOUND, OUTBOUND, AND TOTAL NET TONNAGE MOVEMENTS FOR
MOBILE, ALABAMA, 1938, ON ALL FORMS OF TRANSPORTATION
(In 1,000's of Short Tons of 2,000 Lbs.)^a

	Total	Inbound	Outbound
All railroads.....	3,210	2,170	1,240
L. and N. - north.....	760	540	220
L. and N. - south.....	110	70	40
Mobile and Ohio.....	910	630	280
Gulf, Mobile and Northern.....	560 ^b	270 ^b	290 ^b
Southern.....	480 ^b	240 ^b	240 ^b
Ala. Tenn. and Northern.....	390	220	170
All highways.....	830	580	250
All East side roads (Cochrane Bridge).....	265	185	80
All West side roads.....	565	395	170
U.S. 43.....	95	65	30
U.S. 45.....	100	70	30
Ala. 42.....	85	60	25
U.S. 90.....	170 ^b	120 ^b	50 ^b
Other ^b	115 ^b	80 ^b	35 ^b
Intracoastal and Inland Waterways.	1,500	1,100	400
Intracoastal canal.....	485	305	180
Rivers.....	1,015	800	215
Total.....	5,540	3,650	1,890
Natural gas ^c	200	200	0
Electricity ^c	180	180	0
Total with utilities.....	5,920	4,130	1,890
Ocean.....	3,444	1,406	2,038
Grand total.....	9,364	5,436	3,928

^aFor sources see preceding text describing individual forms of transportation.

^bEstimates.

^cEquivalent in tons coal.

gage on railways and airways, or goods handled in passenger automobiles, all of which are insignificant in bulk, although of considerable importance in value or intangible terms.

Some composite index which included volume, value and other characteristics ideally might give a truer picture of the relative importance of the arteries of trade than mere tonnage figures. Such an index was not devised because: (1) no figures other than those for tonnage could be secured or even closely approximated for all routes; (2) the author is not sure what weights should be given in an ideal index to such diverse items as tonnage, cubic volume, value, or cost of handling (loading, perishability, and so forth), and other information as to character of goods, to say nothing of indicating the relative importance of passenger traffic (how many passengers equal a ton of freight or vice versa, how much more or less important is a senator's official travel than an office boy's trips to see his girl, and so forth), or the significance of telegraph, telephone and other communication devices. (3) Finally it is believed that a concrete, definite measure is of some value, and weight is probably the most important single measure to choose in a location study of a transportation center. Furthermore, a rough comparison of probable value and weight figures (based on principle commodities moving) indicates that there is not a very great discrepancy between weight and value of total inbound and outbound shipments. Tables 4 and 5 for the ocean trade of Mobile show that outbound value in relation to tonnage is slightly higher than the inbound ratio; even this discrepancy is somewhat evened up because inbound cargo on the seas becomes, in large part, outbound on land. Nevertheless there is weight loss and value increment on some goods moving into and then out of Mobile, which will be explained below. Use of weights therefore enables one to obtain a measure of weight loss in the city, which adds to one's understanding of Mobile and its supporting arteries.

Securing tonnage figures was a difficult problem and entailed approximations for some forms of transport. The total figures however are believed to be correct within about a 10 per cent range of error. Judgment on the part of the compiler was required in some places, but the figures are primarily an independent quantitative measure. Railroad and ocean traffic, almost three-quarters of the total, are accurately measured data and

should be reliable within 5 per cent. Almost the same can be said of the waterways traffic, as well as of the electrical equivalents; rail, ocean, waterways and utilities account for more than 90 per cent of the total traffic.

The same cannot be said, however, of highway traffic, where an error of 25 per cent is possible, perhaps even probable. For individual highways the error may be even greater. One difficulty, even if precise figures were available, is to determine where the measure of truck traffic should be made around the city. In this study the points of measurement were made just outside the built up area of the city and suburbs, to make certain that no intra-urban traffic was counted. Highway figures are derived from total traffic-flow maps, based on statistically large enough sample counts to be reliable, of total traffic as well as the number and load of trucks on main routes. Figures for Mobile origin and destination traffic are derived from percentages of total traffic; these percentages are based on a figure of 68 per cent for Mobile origin and destination of all truck traffic reported in fairly large samples on Cochrane Bridge, with slightly higher estimates by the author for other roads more local in character. Inbound and outbound percentages of Mobile traffic are arbitrarily figured at 70 and 30 respectively and represent the consensus of opinion of local trucking experts and others.¹

¹The following formula was devised by the author to compute annual freight traffic density for individual roads, and was used in the construction of Figure 16 and Table 6:

$$T = 365 \cdot V \cdot t \cdot k \cdot L$$

- T = Tons (of 2,000 lbs.) carried on an individual road per year.
 365 = Number of days per year.
 V = Total vehicles per day on individual road counted by State Highway Department.
 t = Percentage of trucks on individual road, recorded by State Highway Department.
 k = Percentage of trucks carrying loads (55%) for whole state, reported in State Highway Department Loadometer Tables.
 L = Average carried load per loaded truck (3.5 tons) for whole state, reported in State Highway Department Loadometer Tables.

To obtain the amount of freight hauled in and out of Mobile the formula is extended as follows:

$$O = m \cdot o \cdot T; \quad I = m \cdot i \cdot T$$

- O = Amount of freight moved into Mobile.
 I = Amount of freight moved out of Mobile.

Inbound land traffic (including waterways) is more than twice the outbound. This is partly counterbalanced by greater outbound than inbound ocean shipments. Nevertheless, total inbound movement is almost one-and-one-half times, or 1,700,000 tons greater than outbound volume. This greater proportion of inbound movement does not seem to be large, since it represents the needs of a city of 100,000 for food and shelter, as well as the excess weight of raw materials over finished products. If Mobile were primarily an industrial city, the discrepancy would be even greater, since a weight loss of three-quarters is common in converting raw materials and fuel to finished products. In the Pittsburgh area, for example, it was estimated that in 1926 about six tons of materials were brought in for every ton of finished product shipped out. The Pittsburgh area is probably the district of greatest concentration of heavy industry, with attendant great weight loss, in America, and therefore has a much larger volume of inbound than outbound trade.¹ Even in the heavy industries of Mobile such as saw milling, paper manufacturing and alumina production² finished products involve only three-fourths or two-thirds reduction in the weight of raws and fuels.³ However the fact that Mobile is a transshipment point from land to sea, is the main explanation for the small weight loss in the city.

The amount of trade between Mobile and surrounding land areas is shown in Table 7. Earlier the relations, as expressed in quantitative weight terms, between Mobile and points reached by sea were shown. The ocean figures previously reported are more reliable than the land figures presented in Table 7. The

■ = Percentage of trucks originating and terminating in Mobile, reported by Coverdale and Colpitts for Cochrane Bridge (68% on most main roads, up to an estimated 80% for local roads).

o = Percentage of total Mobile movement outbound (70%) estimated by trucking experts in Mobile.

i = Percentage of total Mobile movement inbound (30%) estimated by trucking experts in Mobile.

¹Personal communication from L. C. Sorrell, professor of transportation, University of Chicago.

²Warren S. Strain, op. cit., p. 262.

³On the other hand the materials brought into Mobile for ship repair and construction are not reported at all in outbound movements, since the ships sail out under their own power. In the total trade of 1938 however this movement is not large.

TABLE 7

ORIGIN AND DESTINATION BY TRIBUTARY REGIONS OF MOBILE INTERIOR TRAFFIC, 1938
(In 1,000's of Short Tons of 2,000 Lbs.)^a

	Tributary Coastal Plain ^b			Birmingham Area			Remainder Primary Hinterland of Port			Total for Primary Hinterland of Port ^b			Remainder of U.S. (Primarily Interior South)		
	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
Railroads...	1,010	700	310	765	535	230	590	220	370	2,365	1,455	890	845	515	330
Highways....	635	440	195	35	20	15	65	50	15	735	510	225	95	65	30
Rivers.....	330	320	10	570	420	150	45	30	15	945	770	175	70	30	40
Intracoastal waterway..	135	75	60	0	0	0	0	0	0	135	75	60	350	230	120
Natural gas and electricity ^c ..	...	...	...	...	...	...	180	180	...	180	180	...	200	200	...
Total...	2,110	1,535	575	1,370	975	395	880	480	400	4,360	2,990	1,350	1,560	1,040	520

^aFor sources see text.^bDelimited in Fig. 1.^cTons coal equivalent.

areal figures are approximations only, based upon the best available knowledge of commodity movements by rail and water, and for highways (in the absence of any complete commodity figures), based on usual limits of truck operation. Since the smallest areal unit in the table is the tributary coastal plain, extending 50 to 150 miles from Mobile (Fig. 1), the error involved is not as great as it would be if areas closer-in were used. In addition, all the figures in Table 7 are subject to the same errors as Table 6. The error for individual regions may run as high as 20 per cent on totals, and even higher for some specific forms of transportation. However, since the boundaries of the regions cannot and should not be drawn sharply, exact figures would be misleading.

The most important contributor of traffic to Mobile is the tributary coastal plain, the area delimited in Figure 1 and described in Chapter IV as starting just west of Pascagoula and extending northerly into southeastern Mississippi and curving easterly into and through Alabama to a point about 100 miles north-east of Mobile, whence it swings back to follow south approximately along the Florida-Alabama border. If traffic to Pensacola and other coastal plain points just outside this territory is included, the total would be still greater. Inbound exceeds outbound tonnage about two-and-one-half to one. This reflects primarily the important movement of forest products into Mobile. Outbound traffic includes Mobile's distributary functions, ranging from wholesale grocery trade to petroleum distribution. The volume of traffic is not larger because the region is so sparsely populated that it does not require much. Mobile however is the dominant city in supplying the area's requirements.

The next most important, well defined section is the small Birmingham area. Trade with this district reflects the heavy movement of iron and steel and petroleum through the port of Mobile, as well as that of other water-borne commodities. Here again the inbound volume to Mobile is about two-and-one-half times the outbound from Mobile to Birmingham. Iron and steel, coal and other heavy commodities moving from Birmingham to Mobile more than counterbalance the petroleum and manganese moving from Mobile to Birmingham.

The total trade handled between Mobile and its primary port hinterland is also summarized in Table 7. It will be remembered that this area includes the tributary coastal plain, the

Birmingham district and all the land in between and immediately beyond--specifically easternmost Mississippi and most of Alabama (Figs. 1 and 18). This territory sends more than twice as much to Mobile as it receives, for reasons just indicated. It has over 70 per cent of the total trade of Mobile. If some contiguous coastal plain areas are added, as indicated above, and particularly if all Tennessee Valley points in Alabama, Tennessee, and Georgia are included, the percentage would rise rather sharply.

Practically all of the remainder of Mobile's trade is divided between the interior South and the Middle West, with the South more important.

If the data in Tables 6 and 7 are compared with figures for Mobile in earlier periods, or to those for other cities of similar size today, they are more revealing. Even as late as 1906 Birmingham products were unimportant in Mobile's port business (Chapter II), whereas at the present time the Birmingham area is very important to Mobile. Another interesting change would be the relative decline of the cotton trade and the Black Belt. The coastal plain, however, has been of continuous importance to Mobile for over 50 years. The growth of various types of forest industries in Mobile is primarily responsible for the trade. The use of the truck has also tended to encourage the trade in recent years, since truck and auto are principally short haul carriers. Comparison of Mobile to other cities is difficult, since the writer knows of no modern cities that have been studied exhaustively for weight balance of trade.¹ If more studies are made, the balance of trade may serve as a comparative index of the character of a city.

Freight Rates and the Relation of Mobile to Other Ports

Routes, facilities and actual traffic into Mobile have been analyzed. There remains to be treated more thoroughly the competitive position of Mobile, a position best represented in the costs of shipping goods through the city. Freight rates are dependent in large measure on distance, character of the goods, and the means of conveyance available, but rates, although regu-

¹Oskaloosa, Iowa, was analyzed for value balance of trade in Fortune, XVII, No. 4 (April, 1938), 55 ff.

lated, in many cases do not conform to a mileage and service scale, largely because of the adjustments made through the years between competing forms and operators of transport, and between competing transport centers. New conditions and new forms of transportation cause constant shifts in details of rate structure. Mobile jealously guards its rate position by taking a vigorous part in rate revision hearings before the various regulatory bodies. The traffic departments of the Mobile Chamber of Commerce and the Alabama State Docks are especially active. An exhaustive study of the rate structure will not be presented here, but the general picture and a few examples will be discussed.¹

Rail, truck and inland waterway rates.--Rail rates to Mobile have already been briefly discussed (Chapter IV) and the generalized rate map for the port has been referred to (Fig. 18). Rates on shipments to the port (rather than overall rates applicable on all shipments) are the most important for Mobile, since port trade makes up such a large fraction of the business of the city. A feature of the rate structure is the equalization of rates between Gulf ports and a large section of the South and the interior of the United States. Gulf ports even have a slightly lower rate to Chicago, St. Louis and other farther western interior centers than Atlantic seaboard ports, since the distance to Europe from the Gulf is greater than from the Atlantic.² However as far as Mobile is concerned this important area of equal competition represents mainly potential territory rather than actual, as was shown in the analysis of sections contributing to Mobile's trade (Chapter IV). The rate structure however is not prejudicial against Mobile, and gives the city important territory in which to seek trade.

For territory within 400 miles of Mobile mileage rates largely apply and the nearest port has the lowest rate. The area shown on the map (Fig. 18) in which Mobile generally has lower rates than other competing ports, and the parity territory in

¹The author is grateful to Mr. R. G. Cobb, Manager, Traffic Department, Mobile Chamber of Commerce and Mr. R. A. Alvarez, Traffic Assistant to Director, Alabama State Docks and Terminals, Mobile, Alabama, for much assistance and information on rate transport problems of Mobile. The author alone however assumes responsibility for the statements made here.

²State Dock Commission Report to State Legislature, Legislative Doc. No. 6, Regular Session 1931 (Montgomery, Alabama, January 13, 1931), p. 20.

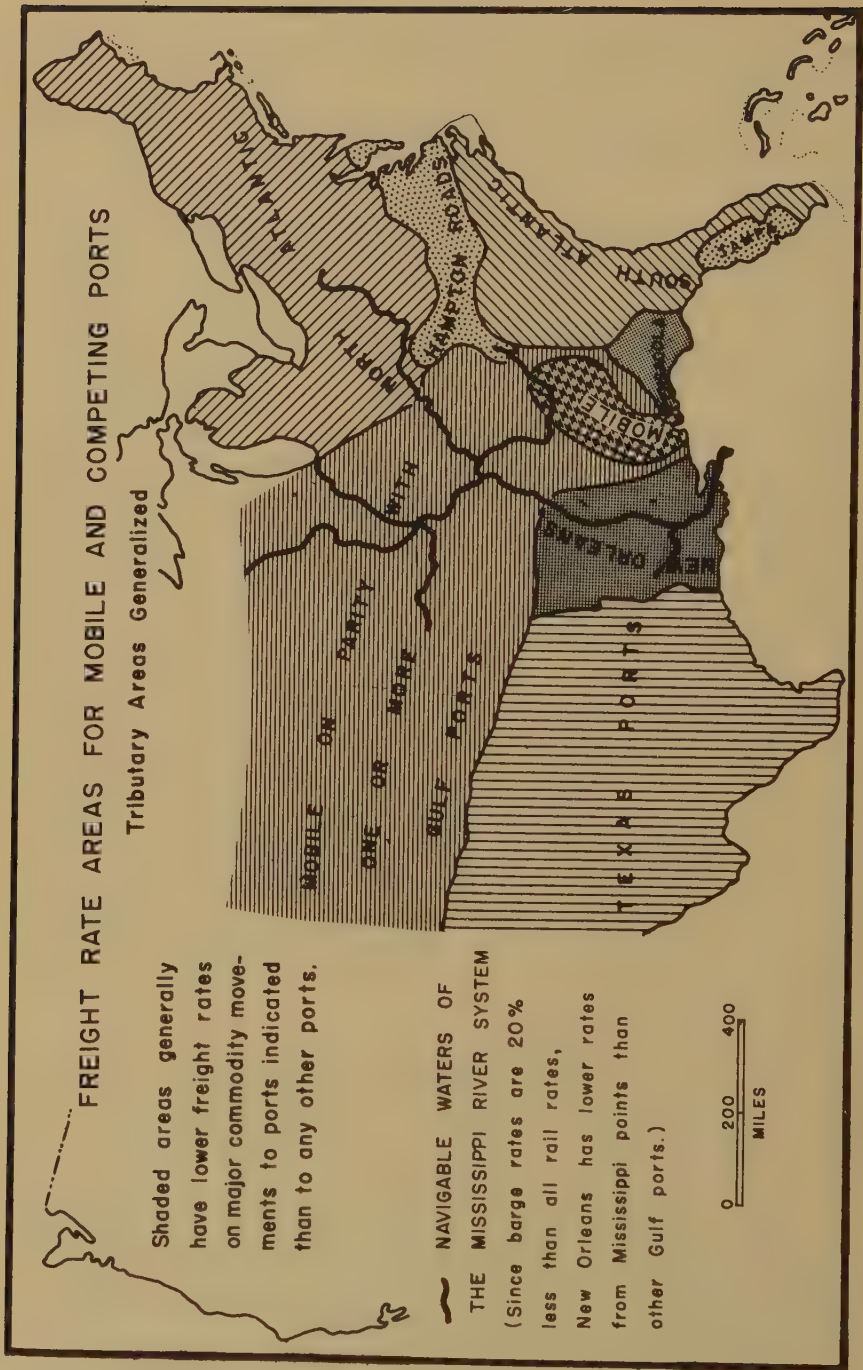


Fig. 18.--Freight rate areas for Mobile and major competing ports in 1939

Alabama shared by Mobile and Pensacola, is called here the primary hinterland of the port (Fig. 1). Most of the territory in which Mobile and New Orleans have equal rates however is not regarded as primary hinterland of Mobile, since large New Orleans, unlike small Pensacola in the eastern parity section, gets most of the trade. The great importance of the primary port hinterland to Mobile was indicated in the regional traffic flow table (Table 7).

The map of freight rate areas (Fig. 18) should not be thought of as anything more than a generalized picture. Most heavy traffic in the south moves on commodity, not on class, rates, and consequently the rate picture often varies with the commodity.¹ However the relation of these rates to most heavy commodity movements is known, so that the map does not give the wrong picture for rates on the most important movements. Nevertheless there is some overlap; for example, on a few commodities New Orleans has the same rate to Birmingham as Mobile.²

Local rail service for wholesale grocery distribution and the like in the area tributary to Mobile is largely on a mileage basis. This was not true about twenty years ago when the basing point system of rail rates was in force in the South. This system has gradually been superseded by approximate mileage scale rates for most commodities in the last few years. When it was in effect however, it meant that goods would be shipped at the rate from one basing point (a large city with competitive transport

¹For references to commodity and class rate studies in the South see what is commonly called the "Governors Rate Case," officially: State of Alabama et al. v. New York Central Railroad Company et al., Interstate Commerce Commission, No. 27746 [submitted June 2, 1939, decided November 22, 1939] (Washington: Government Printing Office, 1940), pp. 265 ff., and 340 ff. This decision and the dissent, by Mr. Eastman, have much valuable general discussion of rates and transportation in the South.

²The map (Fig. 18) was originally drawn by Mr. R. A. Alvarez of the Alabama State Docks, and was examined by rate experts in Mobile and other cities in 1940 and judged to be substantially correct. It was changed slightly by the author on the basis of suggestions by others and material in the Port Series handbooks. The territories marked out for eastern seaboard and peninsular Florida ports were not indicated on Mr. Alvarez's map and are based largely on maps in earlier editions of Port Series for individual Atlantic ports and later editions for Florida ports. Most recent editions of the Port Series handbooks do not have maps for rate areas, but instead present tables for individual commodity rates.

connections) to another and then the local charge from the second basing point to a local station would be added. For example goods from the northeast destined for some small town a few miles northeast of Mobile would be carried at the rate charged for hauling to Mobile plus the cost of back hauling from Mobile to the local point.¹ Thus freight rates were often higher for a short haul than for a long haul. The result was to favor concentration of business in the basing point centers. This was particularly true in wholesale lines. With the abandonment of the basing point system after enforcement of the long-haul short-haul clause,² Mobile began to lose wholesale business, since smaller centers were no longer at a disadvantage and furthermore had the truck available for distribution in all directions, even though they did not have other forms of transportation to serve all the surrounding area.

Truck rates out of Mobile are approximately on a mileage basis, except for the fact already noted (Chapter IV) that intra-state rates are not definitely controlled and thus Mobile benefits from lower rates for Alabama traffic, more than a port in another state. This is a considerable advantage to Mobile, although, as we have seen, economical truck operation is confined mostly to short distances. The effect primarily is to handicap Pensacola and Panama City slightly, since they are the only important out-of-state ports close to Alabama.

Inland waterway rates are fixed at 20 per cent less than rail rates. In addition there are many joint rail and water rates to points beyond the waterways at rates less than straight rail rates, the percentage varying with the proportionate distance moved over each form of transportation. Mobile thus has a low rate to Birmingham; New Orleans also has a lower rate than straight rail (more than Mobile's, nevertheless) because the rates apply over the Intracoastal Waterway as well.

Ocean rates and the position of Mobile.--Ocean rates from

¹For a description of the old basing point system see: Ulrich B. Phillips, "Railway Transportation in the South," The South, VI, 314 ff.

²In some intrastate rates long hauls are still being made for less than short hauls, but the rates are being revised. See, for example, Alabama Public Service Commission, Rates on Lumber and Related Articles, Docket 4136, January 27, 1940.

Mobile to most places in the world are essentially similar to the rates from other Gulf and Atlantic ports. Exceptions are provided by short hauls; for example, Gulf ports have a slightly lower rate to Gulf and most Caribbean points than do North Atlantic ports. Even here, however, the prevailing principle is to equalize rates, although since ocean rates are so low, they are hardly ever as controlling factors in cargo movements as the more expensive land rates. Most ocean rates are set by steamship conferences operating in certain trades which attempt to equalize rates so that a member operating out of one port will not face rate competition from another line running in the same trade from another port. Equalization of rates, regardless of distance between competing centers in the same general trade, is therefore much more widespread on the ocean than on land today.

Mobile "does not assail the reasonableness of the equalization of [rates regardless of] ocean distances. . . .," but has fought hard for rate advantages in the interior to points which it is nearer to than other ports are.¹ Only by lower rail rates can small ports compete with large ports. A mileage basis of rates therefore gives Mobile most of the business in the important Birmingham area. The 400 mile limit for mileage rates prescribed by the Interstate Commerce Commission therefore helps Mobile. The city would prefer that mileage rates be applied for even longer distances since it is the short-haul port to much of the interior South where parity rates now are in force.

In recent years steamship lines in Caribbean trades, especially to Puerto Rico, Cuba and Central America, have absorbed in their ocean rates the differentials in inland rates to American ports. For example, although the ocean rate from Mobile to Puerto Rico is the same as that from New Orleans to Puerto Rico, the rail rate is higher from Birmingham to New Orleans than from Birmingham to Mobile, and thus traffic moving from Birmingham to Puerto Rico would normally move through Mobile. The steamship lines, however, charge a rate from New Orleans to Puerto Rico on Birmingham traffic that is lower than the established rate by the amount of addi-

¹City of Mobile et al. v. Baltimore Insular Line, Brief on Behalf of Complainants, before the U. S. Maritime Commission, Docket No. 567 (Mobile, 1940), p. 22. The numerous cases brought before the Interstate Commerce Commission testify to this interest in mileage rates to the interior.

tional shipping charge from Birmingham to New Orleans over the rate from Birmingham to Mobile. Thus it is just as cheap for the Birmingham shipper to ship via New Orleans as via Mobile.

The absorptions were started by steamship companies desiring to get business tributary to ports they did not serve. This practice saved them the expense of making numerous calls at small ports for small lots of business. Soon, however, the practice spread to such an extent that, in the words of one witness, "everything does absorb against everything," and the total net earnings of all steamship companies were reduced because they all absorbed against each other and had to stand the expense out of their own pockets.¹

The result of this practice was to divert traffic from Mobile and small ports to New Orleans, the large port with more service. Mobile, therefore, complained to the U. S. Maritime Commission (and later won the case), charging discrimination between ports and negation of the Interstate Commerce Commission standard for reasonable rates from interior points to ports. In years past ports had been more equalized in the interior and Mobile and other small ports had fought hard for the measure of rate advantage now set up by the Interstate Commerce Commission. The absorption practice broke down this whole interior rate structure and reopened the question of equalization of ports. Although the case involved only Puerto Rico, Cuban and Central American absorptions are also practiced to such an extent that Mobile was handicapped in efforts to secure adequate Central American services.² Coastwise and foreign shipping conferences operating outside the Caribbean do not allow absorptions.

In its complaint Mobile was joined by other Gulf ports--Houston, Galveston, Beaumont, and Lake Charles, and opposed by New Orleans. Baltimore then joined Mobile because absorptions against it were probably greater than at any other port.³ New

¹Statement of Mr. Carroll Waterman, Vice-President, Waterman Steamship Company, Mobile, quoted in ibid., pp. 24-25.

²Statement of Mr. S. P. Gaillard, Jr., attorney for Mobile complainants before the Maritime Commission.

³Statement by Mr. Seal, of Baltimore, as witness in hearings before the U.S. Maritime Commission, Docket No. 567, Mobile, March 27, 1940; reported in stenographer's minutes (typed), p. 284.

York then joined forces with New Orleans and the defending steamship companies practicing absorptions. The line up of ports on this case shows clearly the relative interests of the several ports. Thus New Orleans and New York, the big ports, are on the same side, and Mobile and Baltimore, the smaller ports, are leagued together on the opposite side. This alignment on a practical question shows the truth of the comparative statement made in Chapter IV that New Orleans is the New York of the Gulf.

The alliance of Mobile and Baltimore is even more significant in determining the character of Mobile. Mobile and Baltimore have striking locational similarities. Each is the short haul port favored by low rates to important sources of traffic in its regions. Baltimore is the closest port to the important iron and steel center of Pittsburgh--Mobile to the important iron and steel center of Birmingham. Iron and steel products are the most important commodities handled at each port. Each likewise is the closest port on its coast to most of the interior tributary to that coast. Each has the problem of competing with a large general port; Baltimore against New York; Mobile against New Orleans. Furthermore each of the large general ports had a powerful advantage, particularly in years past, of possessing water transportation to the interior; New Orleans had the Mississippi while New York had the Hudson River and Erie Canal. To meet the competition of these connections both Baltimore and Mobile became pioneers in their regions in the construction of railroads to the interior. Baltimore built the Baltimore and Ohio Railroad and Mobile built the Mobile and Ohio Railroad. The very similarity in names for the two railroads gives a clue to their inland destination, a destination which both actually reached earlier than rival lines with even more grandiose names.

The differences between the two cities are in size; Mobile is a small edition of Baltimore, just as New Orleans is a little New York. The difference in size correlates with the relative importance of the regions in which the cities are located: Baltimore is a port for the all important manufacturing belt of America, while Mobile is a port for the much less important industrial and rural section of the South. Mobile, therefore, may be called the Baltimore of the Gulf. If this comparison is kept in mind Mobile's character and significance can be better appreciated and understood.

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